

TECHNOLOGY

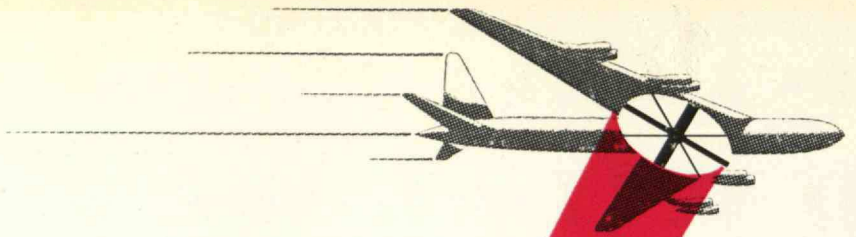
REVIEW *February* 1954



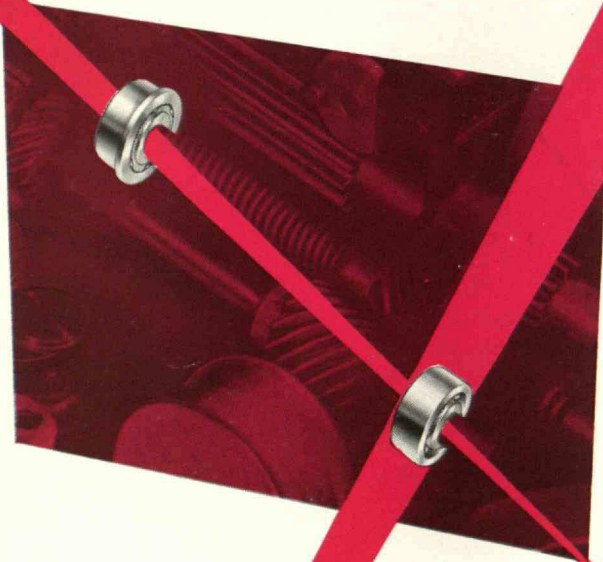
technology review

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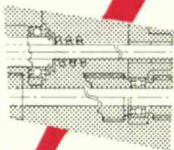


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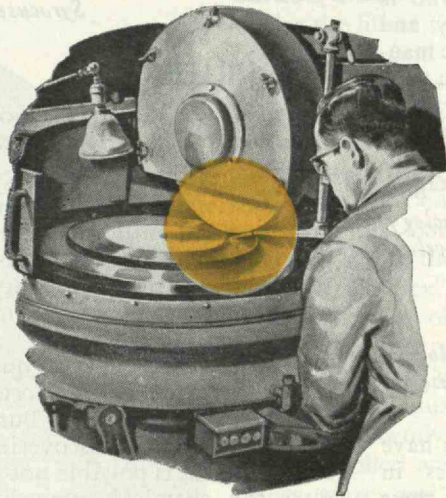
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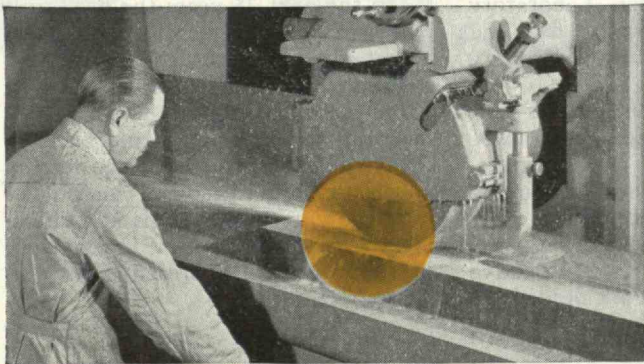


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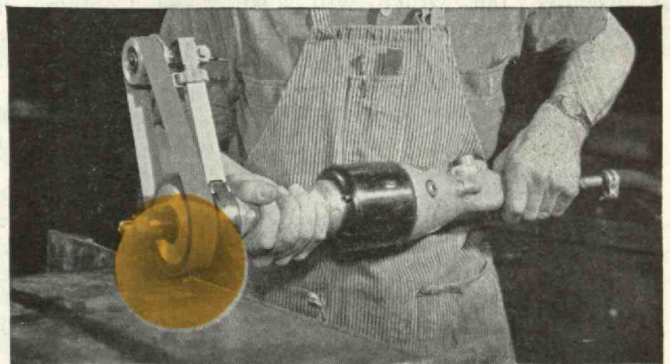
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THE TECHNOLOGY REVIEW, February, 1954, Vol. LVI, No. 4. Published monthly from November to July inclusive at Emmett Street, Bristol, Conn. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription \$3.50. Canadian and Foreign subscription \$4.00. Entered as second-class matter December 23, 1949, at the Post Office at Bristol, Conn., under the Act of March 3, 1879.

What General Electric people are saying . . .

G. C. HOUSTON

Mr. Houston is Manager—Manufacturing Training Services Section, Manufacturing Personnel Development Services Department.

" . . . Leadership ability is not developed by attending lectures or by reading, even though such activities may be helpful in stimulating thinking and developing a higher degree of understanding. We believe, without qualification, that the only sound way to acquire and develop these abilities is through the process of learning by doing. Consequently, any well-conceived leadership development program is built around these principles . . .

Provide opportunities in the work situation to practice doing those things required of men in positions of leadership responsibility.

Associate with proved leaders.

Adequately evaluate performance and give sound guidance and counseling along the way.

Each of the individual's assignments in his work situation should be supervised by a man who has already proved his leadership ability, who is genuinely interested in developing others, and who is familiar with the objectives of the assignment in relation to the needs of the candidate. The assignment should be planned to provide experience which will not only increase the candidate's know-how, but which will also provide an opportunity to strengthen his weak points or further develop his specific abilities.

G. E. Review

P. R. HEINMILLER

Mr. Heinmiller is Managing Editor of the General Electric Review.

" . . . There is more writing in industry than turning out technical reports. There are letters and memorandums, reports and articles to associates in your field of engineering, and what is most difficult of all, presentations to management. I say 'most difficult of all' because you must get your ideas across to non-engineers, and you cannot take refuge in technical jargon.

When writing signed articles for

technical publications, you must: know your audience, write so your audience can understand you, and keep everything in a logical sequence. Be complete and concise, use active verbs, mix short sentences with long ones to give a change of pace, and avoid clichés. Start with an outline and then fill it in.

All other things being equal, the engineer who is articulate, who is able to express himself orally and in writing in an understandable manner, will gain more prominence than one who cannot. (I prefer the word "prominence" to "success," because the latter has conflicting definitions and often carries a high price tag.)

*at Case Institute of Technology,
Cleveland*

H. M. ROZENDAAL

Dr. Rozendaal is Manager—Biological Studies Section, General Electric Research Laboratory.

" . . . Engineers and physicists have contributed much to technics in medicine and biology. Many of their efforts have been in the field of medical physics or biophysics. They have led to the discovery or development of apparatus, such as electrocardiographs, x-ray machines, diathermy equipment, electron microscopes, analytical apparatus using ultraviolet and infrared light, to mention only a few. Drs. Whitney and Coolidge in our Laboratory have been pioneers in this field and their contributions are known to every physician.

And now atomic energy has seriously affected medical diagnosis, medical therapy and biological research. New apparatus is being introduced to medical personnel. New devices for more accurate measurements and localization of radioactive isotopes in the body are needed. In these and allied fields, the engineer,

the medical man and the biologist have many interests in common. We must encourage these people to get together to explore problems of mutual interest. Such an approach will be of interest to the scientists but, much more important, it may result in developments of great benefit to our patients.

*Institute of Radio Engineers,
Syracuse, N. Y.*

H. F. MILLER

Dr. Miller is Manager—Advance and Development Engineering Services Division

It is estimated that at present there are about 100-million acres of worn-out land in this country. Bringing this land back to productivity is one of the major tasks that must be undertaken.


This will require vast quantities of the nitrogen-, phosphorus-, and potash-type fertilizers. But apart from this, recent discoveries have shown that it is possible not only to alter the chemical composition of soil but also its physical composition—characteristics such as porosity, density, texture, and moisture retention. Small quantities of organic materials—the "soil conditioners" as they are called on the retail market—are capable of doing many of the things that only humus in the soil could formerly do.

In the next 25 years the need will also arise for other chemical additives needed for the soil to support the growth of the mold or the fungi now present in humus. There is conjecture that soil molds and bacteria play a great role in transferring nutrients from the soil to the roots of the growing plants. This is a chemical industry—not now in existence—that could be breath-taking in scope.

G.E. Review

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THE TABULAR VIEW

Summer Session. — PROFESSOR ERNEST H. HUNTRESS, '20, Director of the Summer Session, draws attention in this issue (page 191) to a fundamental change of emphasis in the summer activities of the Institute. His review of the origin and development of the Summer Session clearly demonstrates that the current viewpoint represents evolution, not revolution. With reference to the new accent upon Special Summer Programs for professional personnel from industry, government, and other educational and research institutions, the article cites new statistical evidence of the changing nature of the Institute's Summer Session. Dr. Huntress has directed this activity since February, 1952, coming to it after a long association with the Department of Chemistry, culminating in a decade as Professor of Organic Chemistry. He has also long been intimately concerned with the M.I.T. Graduate School through service for 10 years (1940-1950) as chairman of the Graduate Committee of the Department of Chemistry, for several years (March, 1950 - September, 1953) as Deputy Dean of the Graduate School, and currently as Secretary of the Graduate School. In addition to some five score professional papers representing experimental research, he is the author of four major technical books, and since 1947 has served as an associate editor of the Chemical Monograph Series of the American Chemical Society. He has been especially identified with the organization and systemization of chemical literature and has taken an active part in the development of the M.I.T. library system.

Tile Technology. — The second and concluding part of an article on "Decorative Tiles — Their Place in Ceramic Art" by E. STANLEY WIRES, '07, appears on page 195 of this issue. In the first part of this well-illustrated article (which appeared in the January, 1954, issue of The Review) Mr. Wires reminded us that much of the world's history, art, technology, and culture could be traced by fragments of tiles which we inherit from earlier civilizations. His article of last month surveyed the characteristic features of tiles from ancient Egypt, Babylonia, Assyria, Persia, Syria, Turkey, northern Africa, Spain, and medieval and Renaissance Europe. In the concluding installment, Mr. Wires traces the development of Dutch tiles, discusses English painted and printed tiles, and outlines the development of the tile industry in the United States from its origin in Philadelphia, Pa., and Bennington, Vt., about a century ago. He concludes with a few remarks regarding the Tile Club — an association of Nineteenth Century artists, painters, and sculptors, who used tile painting as an outlet for their creative talents. Illustrations for both portions of Mr. Wires's article are taken from the collections of American, British, and Continental European art museums, as well as from the extensive personal collection of tiles of Mr. Wires. The author is a graduate of the Institute's Course in Architecture and, throughout his

(Concluded on page 178)



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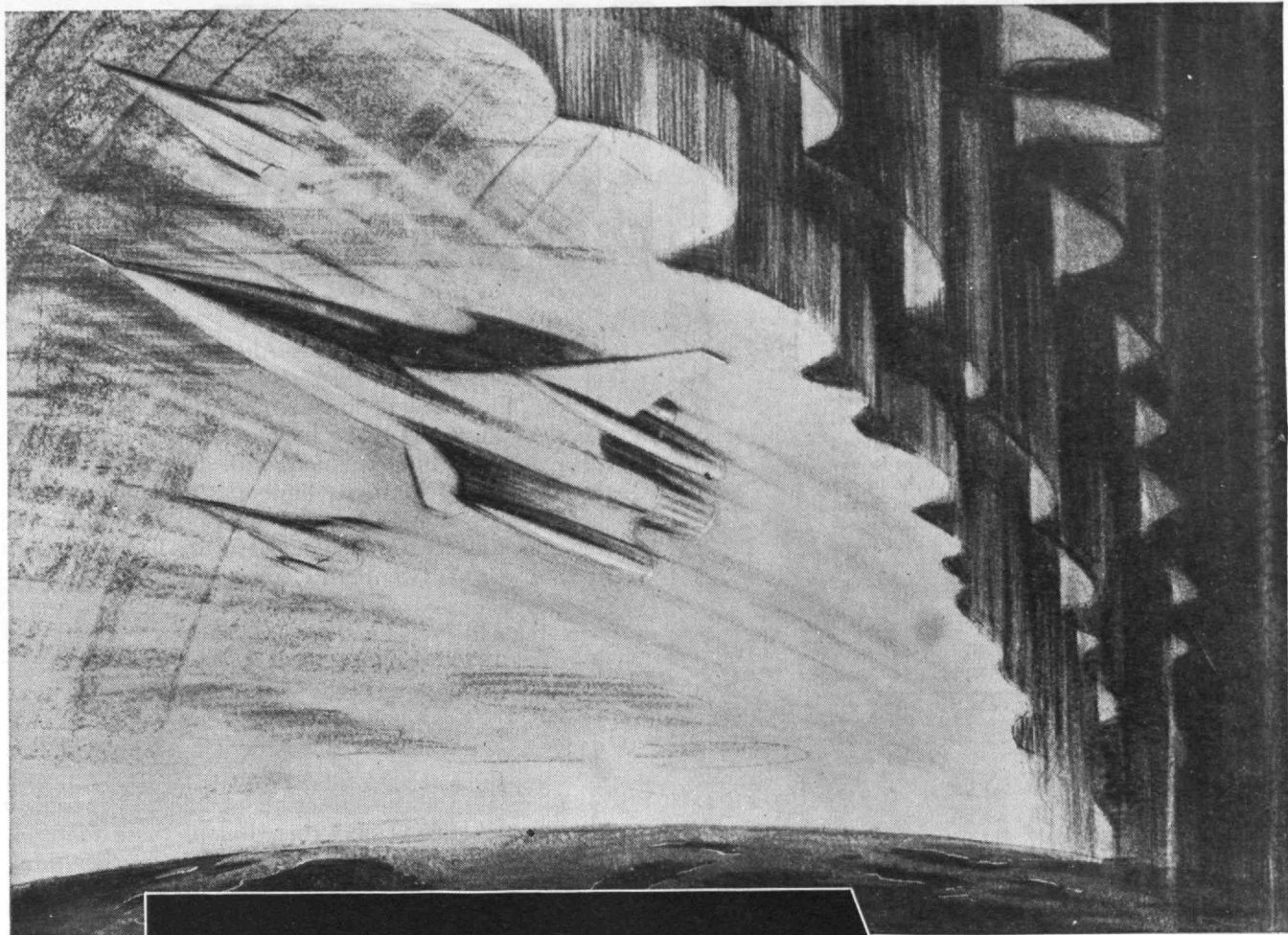
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GEARS

THE TABULAR VIEW

(Concluded from page 176)

professional life, has been closely associated with the tile industry. He was treasurer and manager of the E. Stanley Wires Company, Inc. of Boston from 1908 to 1944, and New England sales manager of the Cambridge Tile Manufacturing Company of Cincinnati, Ohio, from 1945 to 1952.

Challenge of Suburbia. — Although the basic lure of suburban living is as great today as at any time in history, three new factors account for the recent very great expansion in living beyond the urban rim. The great increase in population, with its high degree of centralization within city limits has provided greater need for the development of the modern suburb. At the same time, two technological factors have hastened the growth of Twentieth Century Suburbia. One of these is increased facilities and comfort of mass transportation; the other is the great advance which has been made in communication, according to KARL T. COMPTON, Chairman of the M.I.T. Corporation, whose article "Today's Challenge to the Family in Suburbia" appears on page 201 of this issue. Dr. Compton takes care to point out that, since suburbs are by no means all alike, it is difficult, if not impossible, to generalize on the problems of suburbia. But of those features which apparently contribute to this more healthful way of living, Dr. Compton singled out for special mention the fact that suburbs are of such size as to be capable of competent administration by civic minded individuals whose personal efforts can be helpful in directing community policies into productive channels. Perhaps such a conclusion might be expected from one who, although primarily known as physicist and university administrator, has performed outstanding services to his local community and, especially, to the nation. Dr. Compton's article is the result of a study conducted last summer and was delivered, in but slightly expanded form, at a conference in Scarsdale, N.Y., last October.



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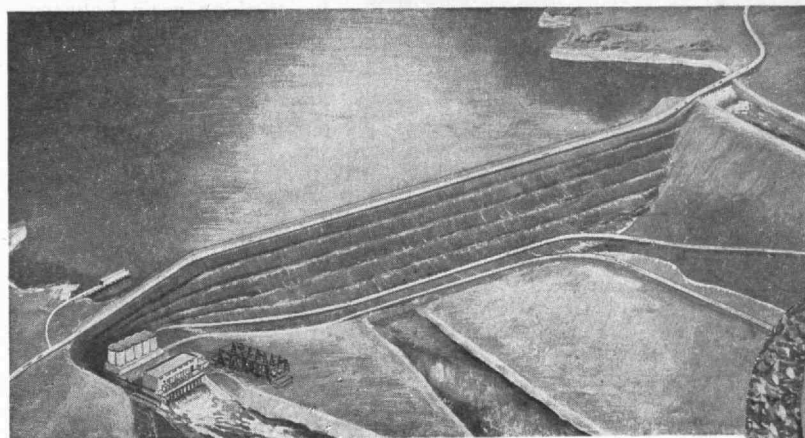
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for new Garrison Dam*

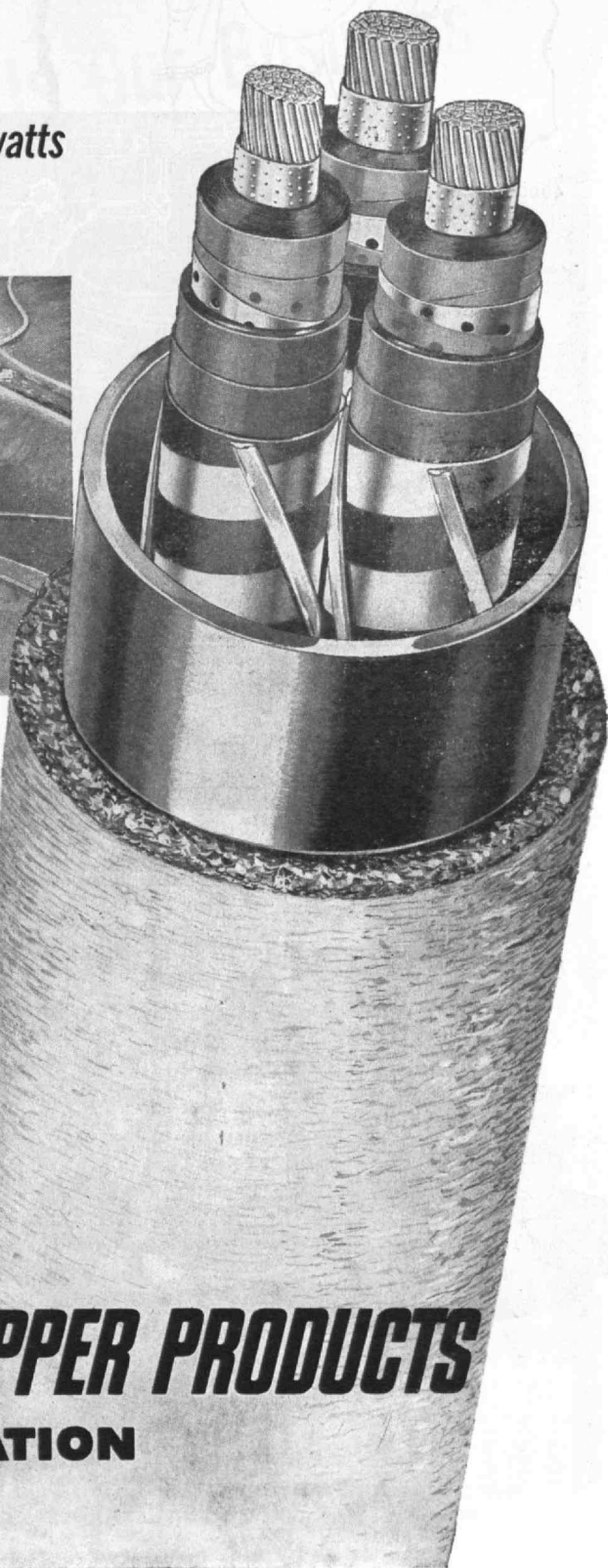


Habirshaw pipe-type power cable will provide a dependable and economical means of carrying this tremendous bulk of hydroelectric power at 230,000 volts, from the powerhouse to the outdoor switching stations at Garrison Dam, being constructed at Riverdale, N. D., by U. S. Army Corps of Engineers.

The cable, a product of Phelps Dodge Copper Products Corporation, will consist of three 500,000 circular mil copper conductors, insulated with 835 mils of impregnated paper.

These insulated conductors will be pulled into pipes, which will be filled with oil at a pressure of 200 pounds per square inch.

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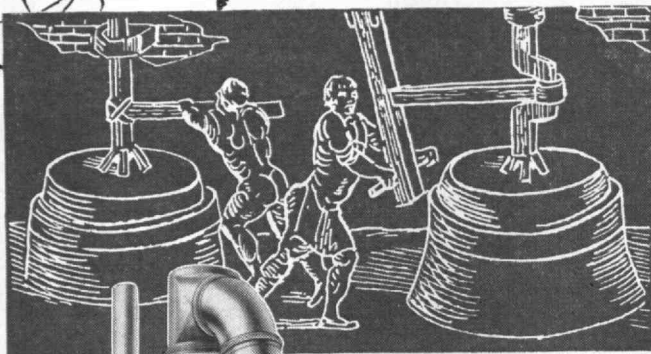
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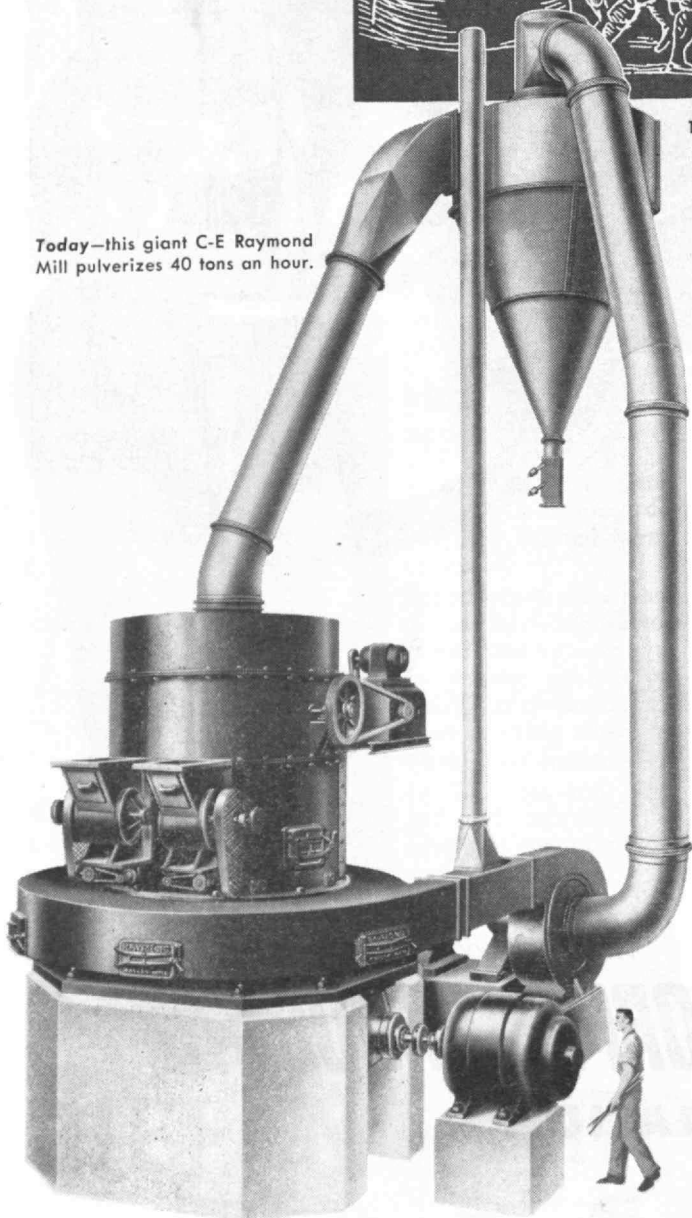


4000 B.C.—they ground a few pounds at a time.



1400 A.D.—some mechanization has been added.

Today—this giant C-E Raymond Mill pulverizes 40 tons an hour.



Thousands of years ago—before man began to record his own history—an unknown genius learned to make flour by crushing grain between two rocks. Thus, this distant ancestor laid one of the first firm foundation stones for our industrial civilization.

TODAY, literally thousands of the vital materials of everyday life depend on pulverizing: Plastics, for example—those magic resins whose uses seem nearly endless—as well as such diversified materials as minerals, coal, cocoa, pigments, sugar, limestone and face powder—to mention just a few.

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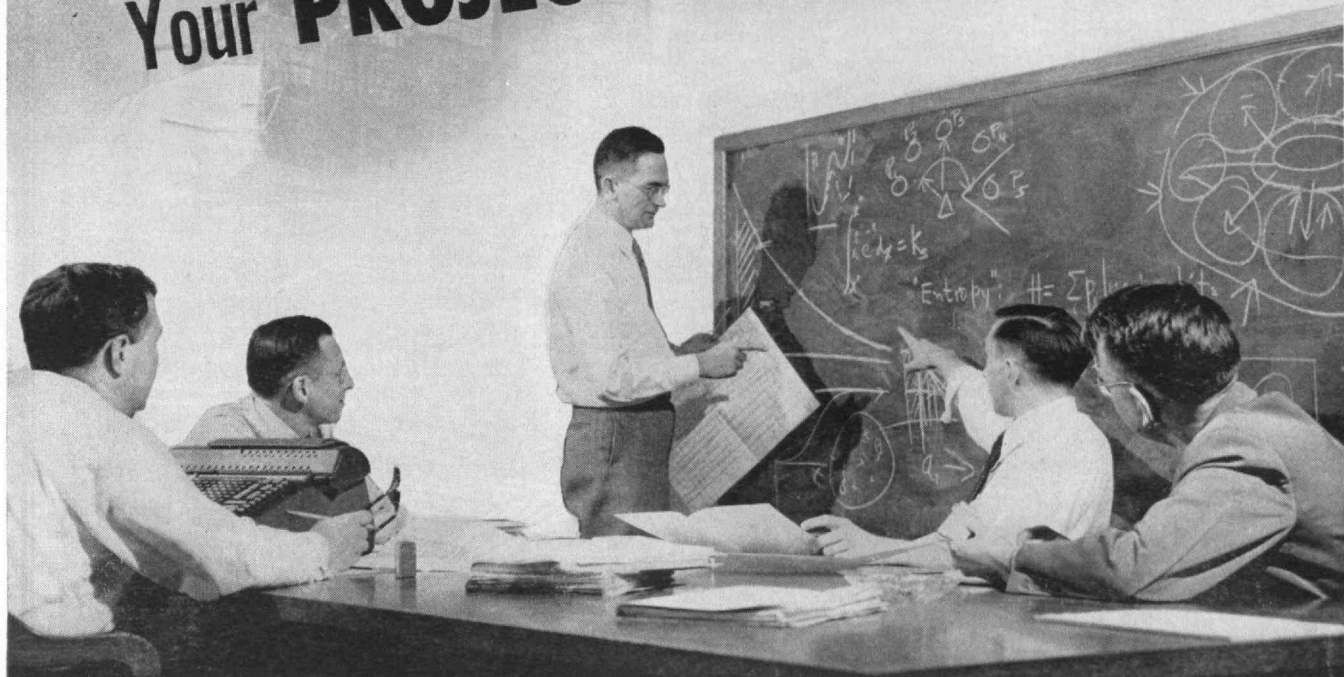
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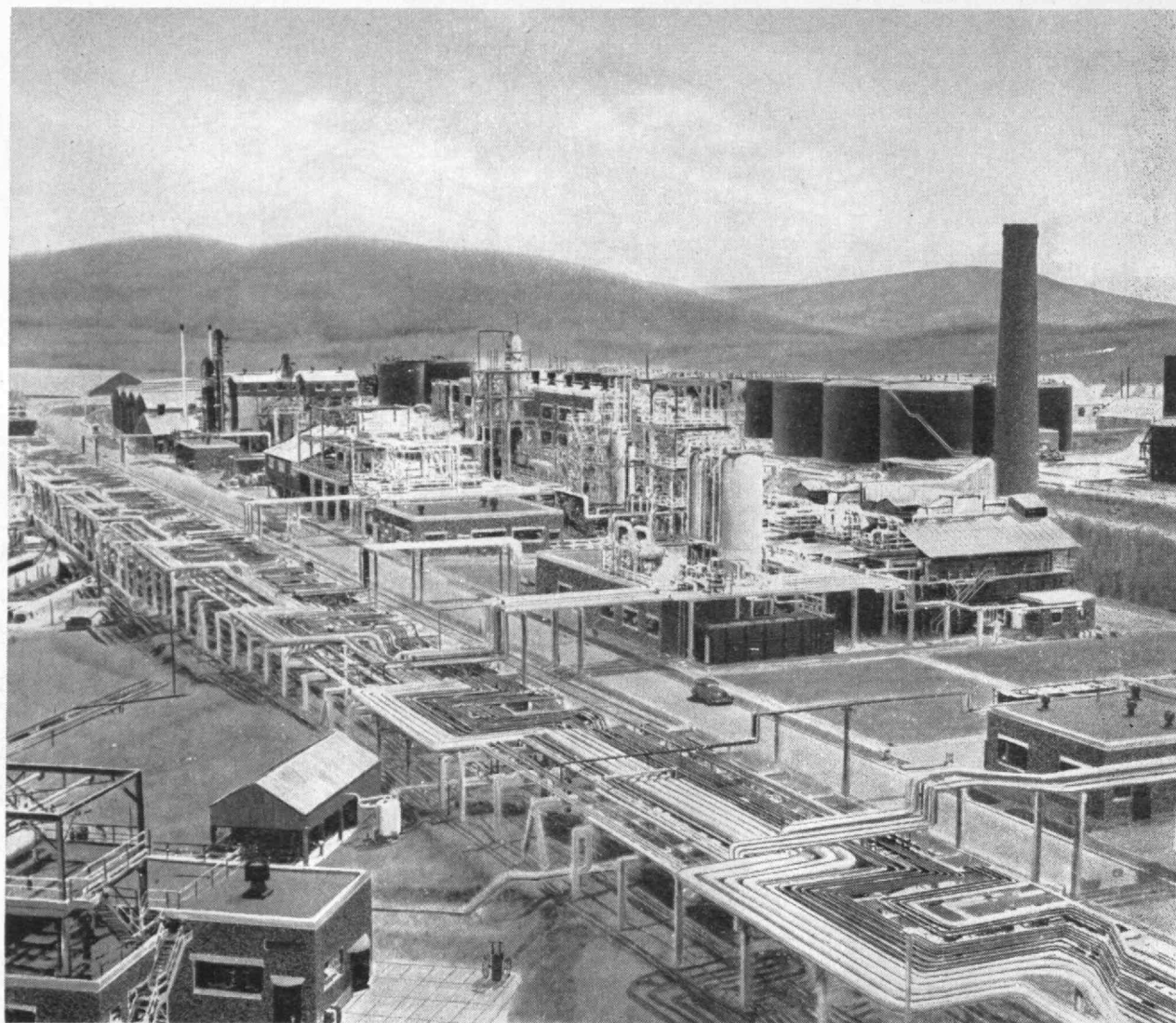
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ON A HILLSIDE IN SOUTH WALES

Llandarcy, the Anglo-Iranian Oil Company refinery situated on a hillside near Neath, South Wales, has grown since 1946 from 360,000 tons to 4,000,000 tons capacity per year.

In this development program Badger Process Division of Stone & Webster Engineering Corporation, and its affiliate, E. B. Badger & Sons Limited, have played a major part.

Some of the new and modern facilities already completed or under construction are crude distillation, catalytic reforming, propane deasphalting, furfural extraction, solvent dewaxing, wax manufacturing and clay treating.



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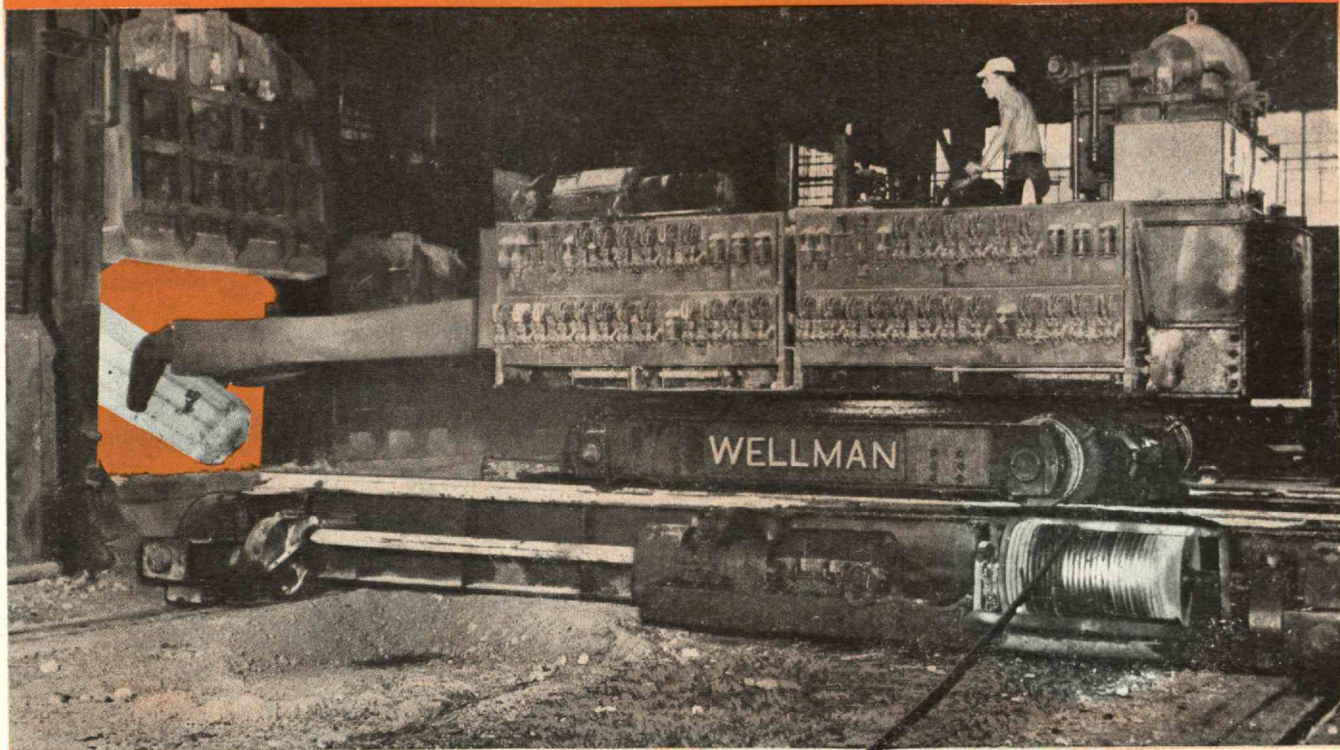


Photo Courtesy Wellman Engineering Co.

This is the industrial equivalent of the domestic pot holder. The charging and drawing machine picks up heavy ingots and puts them into and removes them from the furnace.

Overhead trolleys, as well as third rails, are frowned upon as sources of power because of safety reasons and so the steel mill wisely chose TIREX Cables for the important job of supplying electric power to this machine.

The user knows better than anyone else how important this machine is to his operation. So he uses cured-in-lead TIREX to

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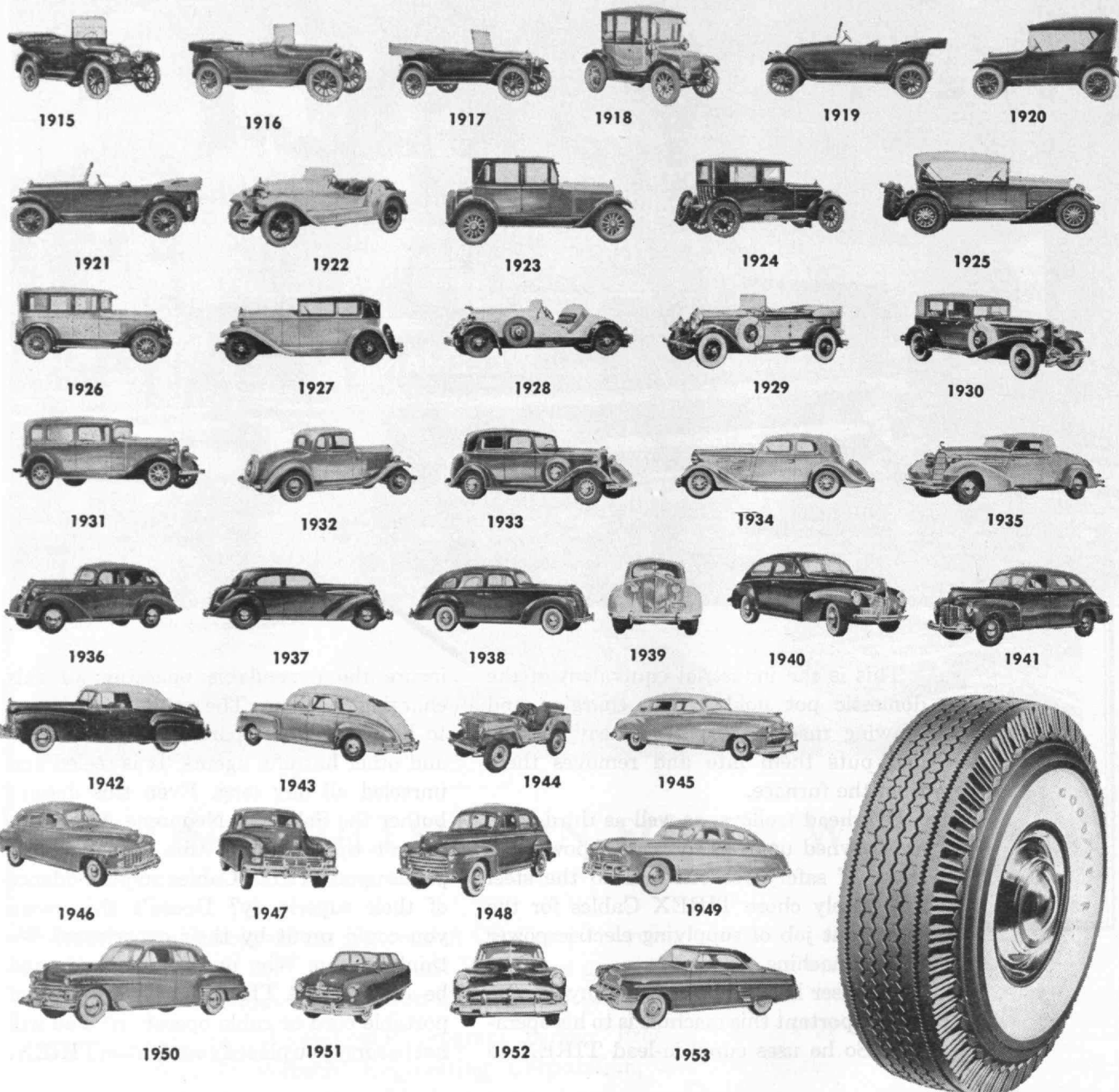
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GOODYEAR

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THE TECHNOLOGY REVIEW

Japanese garden lantern (January Contents page) was made for 16th Century Japanese emperor. This lantern, largest of its kind, was presented to the City of Boston by a Japanese merchant.



Raymond E. Hanson

How Well Do You Know Boston?

Broken monument reading, "Boston 8 Miles, 1734" within a few feet of well traveled streetcar and bus lines in a business section of town, was witness to several important historical events. Do you know where this marker is? If not, see Contents page for March.

THE TECHNOLOGY REVIEW

TITLE REGISTERED, U. S. PATENT OFFICE

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Yarns

Symbolic of the textile industry is this photograph, by J. P. Wahlman of Chicago, which was displayed in a one-man show at the Institute's Photographic Salon.

THE TECHNOLOGY REVIEW

Vol. 56, No. 4



February, 1954

The Trend of Affairs

Science in High Schools

TWENTY-THREE prominent U.S. educators warn that the nation is critically near a breakdown in the first step of training scientists — high school science teaching. In view of the importance of science and scientists to the national economy and the national defense, they find the situation "not only insupportable but perilous." The warning is contained in a report, published in December, by educators who took part in the month-long Conference on Nationwide Problems of Science Teaching in the Secondary Schools, held last summer at the Harvard Graduate School of Education. In part, the report states:

In the scientific and technological culture of our present day society, every citizen needs a realistic understanding and appreciation of the part that science, both physical and biological, plays in everyday life. Of comparable importance are also the development of understandings and skills which function in a wide variety of occupations, and the identification and encouragement of scientific abilities needed in engineering, research, teaching, and other scientific professions. . . .

Surveys of the country's youth have found that the intellectual resources of the United States are not being exploited to anywhere near their full potential. Such a finding, at the onset of the "Atomic Age," should command the serious concern of educators, scientists, and industrialists alike.

The group found that the present shortage of science teachers may be expected to grow more acute in the next decade. Further, some of the people now teaching science are not qualified for the task. Comparison of supply and demand for high school science teachers over the past few years and projected changes in high school population during the next decade lead to alarming conclusions, the report states. Among these conclusions are:

1. By 1960 there will be 9,300,000 public school students in grades 9 to 12, an increase of 41 per cent

over the current enrollment of 6,600,000 in those grades.

2. By 1965, high school enrollment will be between 11,000,000 and 12,000,000 — almost double the present figures.

3. There are now 67,000 science teachers in public secondary schools. The number required in 1960 will be 84,000 and by 1965 the need will rise to 100,000.

4. The annual number of college graduates has dropped from 430,000 in 1950 to 300,000 in 1953.

5. The annual number of college graduates qualified to teach high school science has declined from 9,096 in 1950 to 4,665 in 1953.

6. Already the annual need for new science teachers exceeds 7,000 and will soon approach 10,000 while at present a maximum of 5,000 potential replacements graduate from college.

Furthermore, the report points out that due to several factors, including more attractive offers from government and industry, many of the college graduates qualified to teach science do not enter the teaching profession.

"For want of a few thousand competent new science teachers each year, science instruction may necessarily be radically reduced in the schools," the report asserts. "Or the instruction offered may be such a caricature of science that promising students turn elsewhere."

The report urges that public attention be directed to the "physical dangers resulting when students are taught science by ill qualified teachers. If parents can be shown that an unqualified teacher may without proper precautions expose their children to the hazards of harmful chemicals, dangerous electrical devices, and improperly handled animals and infectious bacterial agents, these parents will influence school administrators to secure properly trained and certified science teachers."

Some of the inadequacies of science teaching arise from problems general to the whole field of public

education; among them, overwork and low pay. In 1938 teachers were in the top third of the income groups of the country, but only 10 years later they were in the bottom third.

What can be done to remedy this distressing situation? The report makes a number of recommendations aimed at raising the level of science teaching:

The critical condition of science teaching should be brought forcefully to public attention.

Colleges and universities should co-operate with scientific groups in a vigorous recruitment campaign for secondary school teachers, especially in science and mathematics.

High school teachers should encourage pupils to consider science teaching as a career.

School officials should explore the possibilities of rearranging curriculums and teaching assignments in order to utilize the talents of qualified science teachers to the utmost.

Efforts to improve teacher training should be continued and should stress a mastery of the field to be taught as well as contact with all major areas of knowledge. The prospective teacher should understand educational theory and the way in which children learn, and should develop skill and competence in teaching through realistic experience with school problems.

National or at least regional standards for teacher certification should be adopted and better methods sought for appraising teacher competence.

A five-year college training program for teachers should be made a mandatory minimum.

Finally, "the generally-desired ends of education will be approached as teaching becomes more nearly a profession. This is not a pious wish, but a mandatory condition for the improvement of teaching. Only then can we have the widespread *elan* which will lead to creative teaching, inspiring both to pupils and teachers. Only then will children in school get what is rightfully theirs. . . . When we consider how inevitably science affects our national economy and national defense, mediocrity in science teaching is not only insupportable, but perilous."

Privately Endowed Research

VANNEVER BUSH, '16, President of the Carnegie Institution of Washington, emphasized the continuing importance of privately endowed institutions for progress in fundamental research, in his annual report to the trustees in December. According to Dr. Bush, "In the field of fundamental research, the research institution is paramount and is by no means an obsolescent form of organization. It can, if it will, carry on fundamental research in a most fruitful way, better on the whole than can be done anywhere else.

"It is sometimes maintained," says Dr. Bush, "that the day of the independent research institution is over, that henceforth fundamental research belongs to the universities with heavy governmental subsidy. . . ." This view he believes is partly based on an assumption "that fundamental research and the education of brilliant students should be closely related and that the research institution is prone to become ingrowing and stodgy in the absence of the continual impact of young minds." But in his opinion the assumption is not well

founded. For he holds that it is an error to regard formal education as the only means of contact with youth. A research institution can and must expose itself constantly to the influence of young minds. It can, in his opinion, select the cream, not only in mental capacity but in the subtle characteristic of being able to fit well into a scientific community. Once selected, its younger staff members can be made genuine participants in its program.

"It has long been realized," Dr. Bush observes, "that one of the most effective ways to ensure outstanding achievements in fundamental research is to locate the individual of genius and support him liberally as he pursues his own way." Although support of the individual of genius, who often times is a lone worker, has resulted in the accomplishment of great things in the past, Dr. Bush feels that much more has been and will be accomplished by "those who have brilliant creative skills combined with human attributes that make them always welcome in a community of their peers. . . . The independent research institution furnishes an ideal climate in which such individuals can function to best advantage.

"The principal condition . . . for ensuring the prosperity of research institutions is financial. It is, moreover, a matter of endowments rather than of current funds for projects," according to Dr. Bush, who adds:

"Since 1920, according to a recent report by C. I. Campbell, the fraction of the total national income devoted to research has been multiplied by 10. But the fraction devoted to fundamental research has increased relatively little. The federal government has entered strongly into support of research, but its entrance has brought a host of problems, and its support is largely confined to projects, some of them in basic research. These projects allow an organization such as a university to expand its operations. But they do not create new centers of research, nor do they allow old ones to proceed to a permanently secure basis.

"The great foundations have turned away from endowment grants, and the new foundations that are formed do not enter this field. . . . This change in the policy of foundations . . . adds to the great sums being spent on a project basis. And the temporary project is not a sound way in which to carry on fundamental studies of depth or subtlety.

"The project idea, introduced largely during the war and as a necessity at that time, is far better adapted to applied research than to fundamental research. This is part of the reason why fundamental research has not been expanded to the extent that it should be. . . . In general the foundations have not tackled the problem of extending fundamental scientific research in this country, nor is there any great indication that they will do so.

"New independent research institutions have been established by individual philanthropists. . . . Yet these have been largely directed as specific objectives, often in the medical field, and often of a semi-applied nature. This is not because men of wealth lack interest in search for the unknown . . . unencumbered by more immediate objectives. . . . It is rather that such men understand better the sufferings and needs of humanity and are anxious to alleviate them."

Quiet!

UPON return to a city from a week end spent in a quiet countryside, one is straightway shocked by the urban noise. The roar of a city — called by acoustical specialists the “noise background” — one soon becomes accustomed to. But punctuating the noise background are unexpected or particularly loud sounds that startle or annoy, and at night interrupt sleep. Recently a new noise nuisance has begun to keep city dwellers awake at night; the operating noises of apartment window air-conditioning units, plainly heard in nearby, non-air-conditioned dwellings when windows are opened wide on hot summer nights.

This country has indeed become noisier and noisier, especially in recent years. Although a few counter-measures have been taken, such as installation of sound-absorbing ceilings in some offices, factories, and restaurants, effectiveness of these measures has been far outrun by the growth of noise resulting from increasing industrialization, more automobiles, more (and noisier) airplanes, and similar technological changes.

Industrial noises sometimes reach sound intensity levels producing measurable damage to hearing. Although sound intensity levels less than 160 decibels will not permanently deafen through rupture of the eardrum, 100–120 decibels can cause temporary hearing loss and may exist in industrial situations. Recovery from transient hearing loss caused by noise is gradual, and may require as long as 24 hours. Hence a worker exposed to deafening noise may recover his full hearing acuity only briefly over week ends.

Noise injury to hearing may be measured objectively. Adverse psychological or psychosomatic effects of noise are hard to measure, but clearly can be serious. Thus no one will deny that nervous tension is

generated by straining to hear, and to make oneself heard, above noise. Loss of sleep because of noise is manifestly a health hazard. Loud, unexpected sounds are known to affect the blood pressure and functioning of the digestive tract of human beings, apparently through a fear reaction. Subjective symptoms recounted by persons exposed to intense noises (as of ram-jet engines) include nausea, optical difficulties, fatigue, and headaches.

Noise, then, has profound effects upon the human being. Hence it is reassuring to know that the health hazards of noise are being given serious consideration. Standards for safe noise levels in homes, offices, and factories were proposed by one speaker at a recent meeting of the American Public Health Association. A simple, empirical method for quantifying noise was suggested by determining the distance at which spoken words may be understood by a person with normal hearing.

Efforts are also under way to attempt to establish standards for industrial noise through the agency of the American Standards Association. The data required for this purpose are not readily available. Indeed, a critical examination of the criteria previously proposed has demonstrated the necessity for obtaining very much more information on the relations between hearing loss and noise exposure than has been available in the past. Already a considerable amount of data has been collected on sound-pressure levels in the various frequency bands, and on the threshold of hearing for pure tones. Such data have been obtained for noise of different kinds, in a program of research in which M.I.T. is playing a significant role.

Not enough is yet known about such questions as: (1) What kind and amount of hearing loss constitutes a handicap? (2) How should noise be specified and exposures be measured? (3) In establishing standards

The camera of Lewis T. Reed, A.P.S.A., A.R.P.S., silhouettes this firmly secured nautical sentry as day-break illumines Chicago. Apparent in the illustration is a tranquility the achievement of which may perhaps be attained when the health hazards of noise are given serious consideration, as discussed in the above article. This photograph by Mr. Reed was included in an exhibit held at the M.I.T. Photographic Salon.



on industrial noise, for what percentage of persons is protection feasible? It may not be possible to establish such criteria immediately. The ultimate goal, however, is the creation of an industrial environment which shall afford industrial workers reasonable protection against hearing loss, even though it may not be possible to achieve the desired degree of quiet.

Washing with Sound

FOR the cleaning of small precision parts the technique of washing with ultrasonic energy is currently attracting attention. Frequently, attempts to clean parts containing fine serrations, deep holes, crevices, and other small pockets by washing or manual brushing result in a high rate of rejects, for the fine particles of metal, dirt, and grease tend to cling stubbornly to their sanctuaries. But if the same parts are immersed in a solvent, or even in soapy water, and the liquid is then agitated at frequencies far above the audible range, cleaning can be extraordinarily thorough. Oil films, for example, are removed so completely that unless the solvent itself leaves a protective film, or one is promptly provided, iron or steel parts will rust rapidly.

This ultrasonic system has, as its basic components, an oscillator to provide a source of high-frequency electrical energy, an electromechanical transducer to convert the electromagnetic oscillations into mechanical motion, and a coupling network to convey electrical energy from the oscillator to the transducer. Vacuum tubes are employed as flexible and convenient methods of generating high-frequency energy to drive the piezo-electric transducer. Under the influence of such excitation, the transducer vibrates mechanically, and it is the mechanical vibration of the transducer, transmitted to the piece to be cleaned through a liquid, which is effective in cleansing.

Unlike the sonars used to detect objects underwater, these industrial washing applications require relatively high frequencies. Best results appear to be obtained in the region of 300 to 1,000 kilocycles, and energy inputs to the transducer are usually at least 400 watts. Ingenious feed-back circuits are employed to simplify the control problem and to assure the attainment of power levels satisfactory for factory use.

Because of the high frequencies, the transducers are either of quartz or barium titanate. The former is a stable material, and, for the purpose, is insensitive to ordinary temperature variations. Available shapes and sizes are limited, and relatively high voltages are required to drive the crystal. Barium titanate, on the other hand, is easily formed in large pieces, even to complex shapes, and can be made to oscillate at much lower voltages. Barium titanate obtains its orderly crystalline array by being cooled from a high temperature while in a strong electrical field. If working temperatures exceed its Curie point (about 120 degrees C.) it is likely to lose its properties as a transducer.

In addition to possessing tremendous emulsifying action, ultrasonic energy of these high frequencies appears to owe part of its cleaning power to the physical dislodging of dirt particles by violently buffeting them loose. Dirt can be dispersed from otherwise inaccessible crevices if they face the transducer or

a suitable reflecting surface. Parts are also cleaned quickly; an electric shaving head, for example, is completely cleaned when given a 10-second immersion in the sound beam. Ultrasonic energy apparently accelerates the cleaning action of typical degreasing solvents and alkaline solutions by factors of 10 to 100.

Among the types of products being cleaned by this method are miniature ball bearings (which can be ruined by a speck of dirt or even a perspiration-wetted fingerprint in the wrong place), deep holes in jet-engine parts and in hydraulic servo-components, potentiometer windings, vacuum-tube elements, and other small parts for the electrical equipment industry.

Plasma Electron Oscillations

IT has been a well-known fact for the past 20 years that electrons passing through the plasma of a low pressure gas discharge cause high-frequency oscillations. The phenomenon has been extensively studied by many workers, not only because of the interest in the physics of the process but also because similar oscillations may occur in the ionospheric and cosmic realms. Moreover, practical application of the phenomenon is made in tubes which generate microwave power.

In the brief space available here, it is not possible to present an adequate explanation of the underlying physics of the problem. Nevertheless, it can be demonstrated that free electrons and free space behave, respectively, like the inductance and capacitance of an electric circuit. The lagging current of an inductance and the leading current of a capacitor exactly cancel one another at a particular frequency called the resonant frequency. For electrons moving in space, there is a relation between frequency and electron density at which the conduction and displacement current exactly balance; the frequency at which this phenomenon occurs is called plasma resonance.

It has long been hoped that a controllable method could be found to excite the resonance oscillation as is done by vacuum tubes in resonant circuits. There has been a theory that plasma oscillations are excited by shooting fast electrons into a plasma, and Duncan H. Looney, '53, research assistant, working with Sanborn C. Brown, 10-44, Associate Professor of Physics, in the Research Laboratory of Electronics, undertook to investigate this mechanism. They discovered that the presence of the electron beam alone was not sufficient to excite observable oscillations. A feed-back mechanism was also required, which the plasma itself will provide if given the opportunity to do so by the presence of suitable boundaries. Under proper conditions, some electrons in the beam are accelerated, whereas others are retarded. By this action an otherwise steady electron stream is modulated by the bunching of electrons. Similar bunching occurs in klystron tubes which have been developed as effective microwave generators.

The feed-back mechanism of the oscillation was found to be standing waves in the plasma which could take on different resonance patterns much like the standing waves in an organ pipe, but they do not appear to obey any previously known laws.



M.I.T. Photo

The Charles Hayden Memorial Library, whose internal court is pictured above, provides commodious, comfortable opportunity for summer study. The building is air conditioned throughout, including the luxurious and restful Music Room, the west portico of which is shown in the picture. An unusually fine collection of recorded music, together with high-fidelity reproduction, is available for the enjoyment of Institute summer guests.

The M.I.T. Summer Session

New Perspectives and Fresh Horizons Are Developed

Which Benefit Industry and Education Alike

By ERNEST H. HUNTRESS

THE rapid acceleration in the rate of development of technological and scientific knowledge is characteristic of the present era. The fruitful results of this speed-up are evident in every aspect of daily life. Although appalled individuals still occasionally call for a moratorium, the whole history of civilization demonstrates that progress will neither be halted nor decelerated by arbitrary edict. Accepting, therefore, the valuable lesson taught by history, and recognizing the ever increasing interdependence of technology and higher education, the traditional ivory towers and cloistered halls must give way to environments more appropriate to the solution of modern problems. Cognizant not only of the necessity for closer collaboration between technical education and industry, but also of the unusual opportunity afforded by its professional and geographical circumstances, M.I.T. has in recent years been shifting the accent of its summer activities to greater emphasis

upon adult education. Through series of short intensive courses of instruction on timely technical topics and by means of professional conferences in particular fields, it has made available, in a form which permits busy industrialists to participate, means of keeping up with recent advances in their technical areas. This new approach to adult education, initially conceived as an experiment, has now so fully demonstrated its merit that the following report is presented of the evolution and present status of the M.I.T. Summer Session.

Evolution of the Summer Session

Subsequent to the initial conception of M.I.T. by William Barton Rogers in 1859, the period of development of these hopes culminating in the charter of April 10, 1861, and the first preliminary session of February 20, 1865, with 15 students, regular courses

of instruction began on October 2, 1865. Although M.I.T.'s first annual catalogue was therefore issued for the academic year 1865-1866, more than three decades elapsed before the first formal mention of summer courses appeared in the 34th annual catalogue issued for the year 1898-1899. Here it is first recorded (pages 59-60) that "During the summer vacation . . . a considerable range of studies is given in the lecture rooms and laboratories of the Institute by members of the instruction staff. . . . The work offered is planned with particular reference to subsequent study at the Institute. . . ."

Over approximately the next four decades utilization of the summer period between regular academic years became a generally recognized Institute activity. The number of individual subjects offered within the Institute's buildings gradually expanded into various professional summer schools, such as those of Civil Engineering, Chemistry, Mining and Metallurgy, Industrial Chemistry, and Geology, Paleontology, and Mineralogy. Under the pressure of rapidly expanding professional advances, the limitations of the regular academic year were ruptured by the transfer of certain subjects (such as Qualitative Chemical Analysis) to required M.I.T. summer schools. In other fields the nature of particular professional interests led to the establishment of centers of study at locations outside of the Boston area. For example, the Summer School of Civil Engineering, after various sessions at several different places, became until the present year firmly established at Gardner Lake, East Machias, Maine; the Summer Schools of Mining and of Metallurgy were held in alternate summers at far-flung locations in the United States and Canada; for more than a decade, beginning in 1902, a traveling Summer School of Industrial Chemistry was operated by the Departments of Chemistry and Chemical Engineering; field work in geology and mineralogy led gradually to the present M.I.T.-Nova Scotia Centre

for Geological Sciences which is located at Antigonish, Nova Scotia.

Concurrently with the growth of the above extra-territorial aspects of the M.I.T. summer activities over the 40 years between the Spanish-American War and World War II, the number and variety of regular courses of instruction offered during the summer period constantly increased, both in the old location in Boston and subsequently in the new buildings at Cambridge. Owing, no doubt, to the (then) relatively rigid curriculums of the various professional courses, the desirability of summer study was accented primarily with respect to its service in making up deficiencies prior to formal admission, in effecting economies of time by anticipation of particular subjects, to removing conditions and failures incurred during the regular sessions, and to broadening the scope of professional training by study not normally included in a particular curriculum. Eventually, the necessity for specialized technical training for officers of the U. S. military services and the increased participation in such activity by the Institute, as a part of its responsibility to the national defense, introduced an additional incentive for summer instruction. Meanwhile the rapid growth and formal recognition of the Graduate School, accompanied by a corresponding increase in year-round prosecution of intensive research, resulted in more attention to, and heavier emphasis upon, the advance of knowledge through summer study.

The gradual change of emphasis of M.I.T. summer activity suggested in the preceding outline naturally resulted in the presence on the campus during the summer of an ever-growing proportion of the Institute staff, especially with respect to those members whose normal professional preoccupation was primarily related to advanced aspects of the various professional fields. Particular groups of these technical experts inevitably gathered about them from time to time other national and international specialists for periods of discussion and professional stocktaking. As such informal assemblies recognized the mutual benefit of these associations in a place where engineering and scientific advances were cur-



Privileges of the M.I.T. Sailing Pavilion are fully available to registrants in M.I.T. Special Summer Programs and Conferences. Its location on the Charles River Basin directly in front of Walker Memorial permits easy access, and facilitates such recreational activity between morning and afternoon sessions as well as at other times. Above the right-hand end of the float may be seen the top of the Sloan Building where some of the Special Program sessions are scheduled.

M.I.T. Photo

rently in progress, where special and sometimes unique research facilities were available, and at a time when the usual academic commitments of the group members were less insistent, many Institute departments seized the opportunity to sponsor professional conferences. As knowledge of the value and inspiration of such gatherings became widely disseminated, industry began to express an insistent desire for its personnel to attend and to participate. Such interchange of viewpoint and experience between representatives, both of theory and practice, of course proved stimulating to both. With the opportunities made possible by substantial increase of the Institute's housing and dormitory system, such specialized conferences and symposia became increasingly more frequent, notably valuable, readily operated, and widely recognized.

Following the close of World War II, recognition of the potential of the M.I.T. Summer Session, considered in the light of the evolutionary trends already summarized, led James R. Killian, Jr., '26, President of the Institute, to envisage an increase in tempo and scope of summer activities which would not only enhance the Institute's prestige and educational service, but would simultaneously permit more effective utilization of staff and general facilities. As the first step in the implementation of this challenge, Walter H. Gale, '29, Associate Professor of Aeronautical Engineering, made in 1949 an extensive survey of summer activities at 43 other colleges, universities and technical schools, together with an analysis of current experience at M.I.T. This resulted in recommendations regarding the nature, scope, organization, and policy for subsequent procedure at the Institute. This evaluation represented the most significant milestone in M.I.T. Summer Session history since the initial establishment of summer study in 1898, and resulted in a complete reformulation of objectives, policies, and administration.

Present Form of the M.I.T. Summer Session

As a direct result of the survey and recommendations of the Gale Report, there was established in September, 1949, as a new component of the general Institute administration an Office of the Summer Session headed by Professor Gale as the first Director. The over-all objective of the Summer Session Office was announced by President Killian as twofold, namely: "to utilize the facilities of the Institute during the summer months to the advantage of industrial, technological and scientific people who cannot participate in our year-round academic program, and to provide parts of the regular academic program for members of our student body who wish to remain for study in Cambridge during the summer." For the imaginative and constructive implementation of this twofold objective into the framework of its present form and for the initiation of many of the fundamentals of its present policies and practice, the Institute is indebted to Professor Gale, who served as the first Director of the Summer Session until on May 1, 1951, he became Secretary of the Institute. From May 1, 1951, to February 1, 1952, when he withdrew to assume new responsibilities as Associate Dean of Stu-

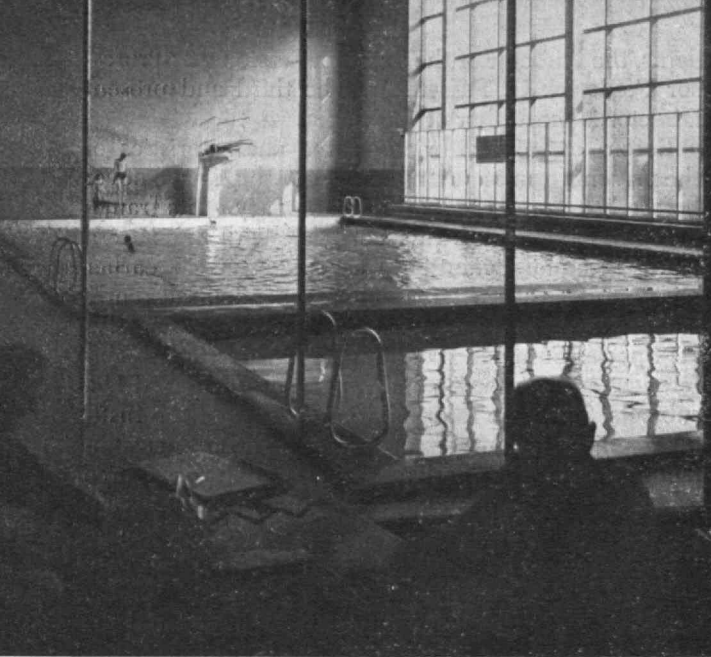
dents, the Director of the Summer Session was Professor Frederick G. Fassett, Jr. The third and present Director is the author of this paper.

Before examining briefly some characteristics of the present form of Summer Session which have never before been presented, a brief summary of its framework may be helpful. In accordance with the pattern whose gradual evolution was suggested in earlier paragraphs, the M.I.T. Summer Session currently comprises three different types of activities, namely: (1) Special Summer Programs; (2) Professional Conferences and Symposia; and (3) certain regular M.I.T. subjects. Since the reformulation in 1949 of the Institute's objectives and opportunities regarding its summer activities, the relative emphasis upon these three aspects has been changing in the direction of accent upon adult professional and technical education of personnel from industry, government, and other educational and research institutions. Thus the number of Special Events has continuously increased and the number of regular M.I.T. subjects diminished as indicated in the following summary.

| | 1950 | 1951 | 1952 | 1953 | 1954 (Est.) |
|--------------------------|------|------|------|------|----------------|
| Special Summer Programs | 9 | 18 | 22 | 26 | 34 |
| Conferences and Symposia | 7 | 6 | 8 | 5 | 6 |
| Total Special Events | 16 | 24 | 30 | 31 | 40 |
| Regular M.I.T. Subjects | 233 | 235 | 232 | 179 | 110 |

Special Summer Programs

The Special Summer Programs comprise a group of short intensive subjects, especially designed for their particular audience. Although the majority of them are of two-week duration with exercises all day Monday through Friday, inclusive, some are given as one-week units, and a few cover three or even four weeks. Some combinations of successive single-week units also comprise a total duration of several weeks, but the nature of the programs is such that it is not possible to take more than one at a time. Most programs comprise both lectures and laboratory demonstrations (or practice) and are often supplemented by field trips to local installations of special professional interest. Each individual program is under the direct and active supervision of some member of the Institute Faculty, and is operated with the assistance of other members of the Institute staff. Almost all programs also utilize for particular topics numerous distinguished special lecturers drawn from outside the Institute staff. Because academic credit is not offered, the content of the various programs is flexible and the subject matter can be, and is, varied to afford emphasis upon topics of special interest to a particular group. No examinations are required, nor are grades given, but a formal certificate of attendance is issued to all registrants. Since each program brings together a group of persons with a large common area of specialized interest, but of wide geographical and professional distribution, each registrant is provided at the first meeting of his group with a roster giving sufficient biographical and professional detail to form a basis for quick establishment of new professional contacts. Moreover, so far as circumstances permit, registrants for a particular program are housed in



M.I.T. Photo

adjacent quarters to promote development of new acquaintances with similar interests. These and other devices to promote cordial human and professional relationships have been most appreciatively received by program participants.

In an effort to emphasize the general attractiveness of the cultural and recreational resources of the Metropolitan Boston and general New England area as ancillary to the direct professional appeal of the technical matter of the various Special Summer Programs, registrants are encouraged to arrange their attendance in connection with vacations in this area. Special housing rates in the dormitories are extended to married couples, and assistance in the location of other housing for couples with families is extended as part of the Summer Session Office service. A special individual letter of welcome is sent out to wives whose husbands have been admitted to Special Programs and various special courtesies are extended to them during their period of residence.

Conferences and Symposia

Summer Conferences and Symposia differ from Special Summer Programs only in degree. They are generally much shorter, usually of one, two, or three-days' duration. Unlike the Special Summer Programs, no tuition is charged, but only a nominal registration fee. Housing in the M.I.T. dormitory system is offered at the same rate as for Special Programs. The actual sessions of a typical conference are operated by departmental representatives and usually comprise many speakers from outside the Institute, but over-all administration, including publicity, preregistration, housing arrangements, and financial accounting, is handled by the Summer Session Office.

Regular M.I.T. Subjects

As is evident from the tabular comparison of the number of special events with the number of regular M.I.T. subjects offered in recent years, the latter aspect is somewhat restricted. The apparent curtailment

The Alumni Swimming Pool, located on the East Campus directly north of the Charles Hayden Memorial Library, has always been exceptionally popular with all members of Special Summer Programs and Conferences. Like the Sailing Pavilion, its extremely convenient location facilitates easy access without loss of time. Just outside the Gargantuan southern window shown in the picture is a large walled garden and sun-bathing area. The pool schedule during the summer provides not only for men, but includes certain periods reserved for women, as well as other periods for mixed swimming.

should be recognized, however, as in the interest of more efficient operation of those subjects which are retained as summer offerings. Rather than spread the staff thinly over a wide variety of departmental subjects in many of which only a very few students desire summer registration, emphasis is given to a limited number of subjects selected with special reference to their value and relationship to substantial student groups. Both undergraduate and graduate thesis research is carried on in the summer by all departments in constantly increasing volume. Fundamental subjects, particularly of the first and second years, continue to be available. Elimination of subjects which experience has shown to be in slight demand during the summer has thus permitted increased staff attention to those subjects retained, to research or creative writing, and to other forms of professional or departmental development. By appropriate equilibration of the three components of current Summer Sessions, namely, the Special Summer Programs, Conferences and Symposia, and regular M.I.T. subjects, it is believed that the staff generally will derive stimulation and inspiration from increased variety and diversification of interest.

Some Facts Regarding Special Summer Program Registrants

As a result of several years' experience with the threefold nature of current Summer Session practice, and particularly since its growth in 1953 affords a substantial and representative sample of size sufficient to permit significant inferences, certain hitherto unpublished facts with regard to Special Summer Program registrants may be of general interest.

During the Summer Session of 1953 there were carried on 26 different Special Summer Programs. These originated and were executed by 10 different Institute Departments as follows: Aeronautical Engineering, 1; Architecture and City Planning, 1; Chemistry, 4; Food Technology, 1; Electrical Engineering, 4; Industrial Management, 1; Mathematics, 1; Mechanical Engineering, 10; Metallurgy, 1; and Physics, 2.

These attracted to the Institute a total of 1,354 registrants, or approximately 12 times as many as the first such series five years ago in 1949. (It must be understood that this figure is independent of, and in addition to, 1,678 M.I.T. students registered as such during the summer.) In addition, 197 other persons actually admitted to Special Summer Programs subsequently found that changed personal plans compelled their withdrawal before arrival in Cambridge, while

(Continued on page 218)

Decorative Tiles

THEIR PLACE IN CERAMIC ART — PART II

*Just a Century Old, the American Tile Industry Traces
Its Origins to Dutch and English Art and Ceramic Practice*

By E. STANLEY WIRES

IN the town of Gubbio, in the hills of Italy, there is a legend about the potter, Giorgio Andreoli. When a child of his was stricken with the plague, he vowed that if God would spare his child's life he would produce a color on majolica, which by its fame would bring a large increase in income that he would devote to the holy church. The child recovered, and, true to his word, Andreoli cast his treasures of pure gold into the melting pot. The famous ruby-colored majolica was the result. Little did he realize that majolica was to be the prototype of Delft earthenware.

Dutch Tiles

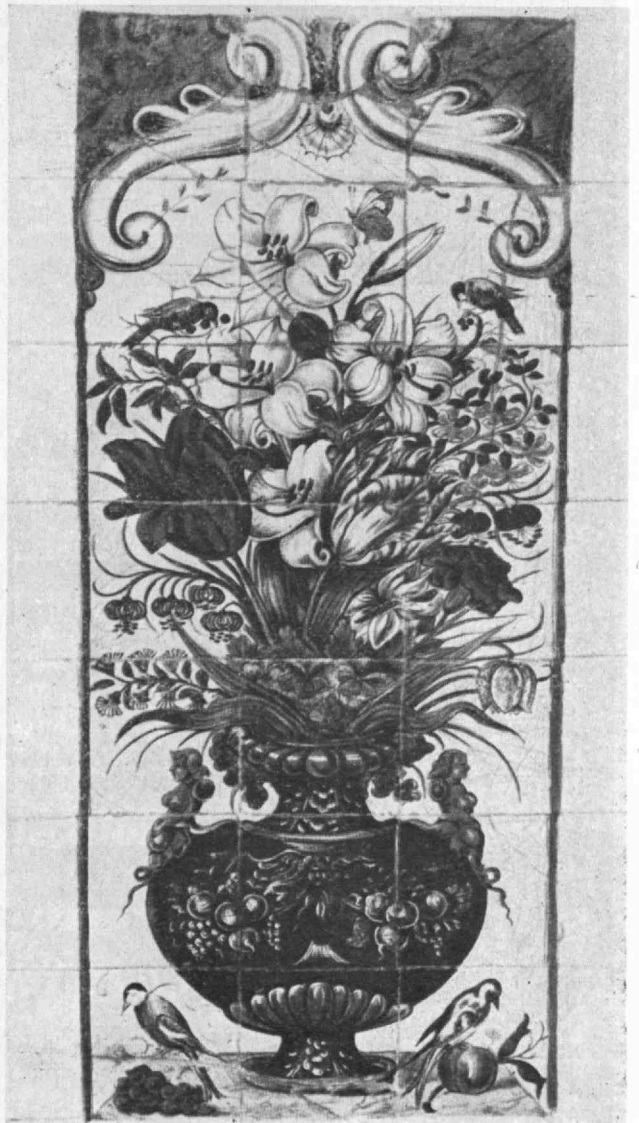
After the Treaty of Breda, in 1609, which ended the war between Spain and the Netherlands, Dutch craftsmen traveled to Italy and Spain and had every opportunity to learn the art of the majolica potters. At this same time East India merchants were bringing Chinese porcelain to Europe and it was not surprising that the Dutch potters became excited about this mysterious translucent ware. Lacking the fine kaolin clay of porcelain, they substituted a cream-colored body, coated with a white tin glaze, decorated in pure blue or polychrome colors.



Museum Van Oudheden, Rotterdam

Fig. 15. This wall tile picture entitled "The House of the Thousand Terrors," is one of the most important Dutch panels of allegorical design of the Sixteenth Century.

Potters from Antwerp founded factories in many Dutch cities, the most important being Delft, a walled and moated city, then used as the home of nobility. The vital struggle with Spain had sharpened the wits of the Dutch people, and with added wealth and trade with the East they were ready to support the work of the potter. Many of the tile picture painters



Museum Van Oudheden, Rotterdam

Fig. 16. A wide range of subjects, including fruit, animals, and floral scenes, such as this vase of flowers, were characteristic of the Seventeenth Century Dutch tiles.



Fig. 17. The Seventeenth and Eighteenth Century Dutch tiles at left are samples of the periods. Designs of ships, sea monsters, and landscapes were influenced by Dutch painting and engraving.

were held in almost equal esteem to that of the great Dutch painters.

At first, tiles and pottery were made in the same factories, but as time went on there were factories for the manufacture of tiles only. Less care was taken in their production and the master painter gradually gave way to the artisan.

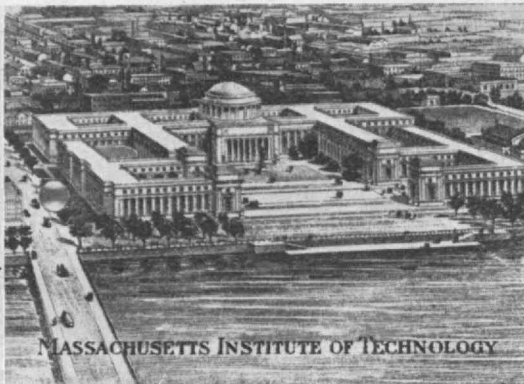
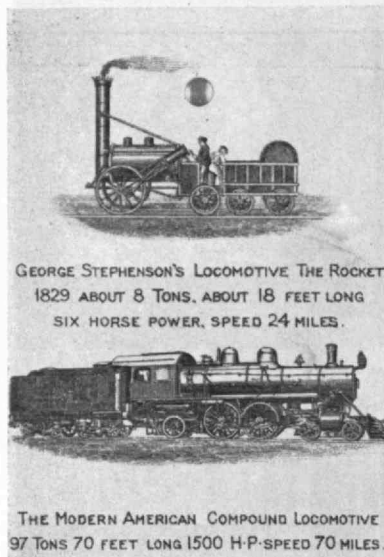
About 1584, a potter named Herman Pietersz married Anna Cornelisz of Delft. Later his name appears as the first member of the Guild of St. Luke. This Guild was originally made up of about 700 members and eight crafts — stainers of glass, engravers, potters, weavers of tapestries, sculptors and carvers, scabbard makers, art printers and booksellers, and dealers in painting and engravings. Members had to serve an apprenticeship of six years and were required to pass a rigid examination. The Guild reached its climax in about 1680, when, out of the Delft population of not more than 24,000, there were 2,000 workers in the 30 potteries. No modern labor union was ever more exacting of its members or more indifferent to the rights of others than was this Guild. The unauthorized setting of a pane of glass made the owner of the house liable to a fine of 12 florins.

The earliest floor tiles of the Fifteenth Century were about seven-eighths of an inch thick, made of a red clay, with overglaze of lead. The transition from lead-glazed floor tiles to tin-enameled wall tiles of the Sixteenth Century must have been a rather gradual process. Enough patterns have been found of the early enameled tiles to substantiate the influence of Italian and Spanish technique, possibly through Flemish channels.

Characteristic of the Seventeenth Century tiles were designs of oranges, split pomegranates, tulips, grapes, and even vases of flowers and dishes of fruit, such as are illustrated in Fig. 16. Importance was given to the corner motives but as time went on the stylized fleur-de-lis of some designs dwindled to tiny rosettes. Designs of ships, sea monsters, landscapes, horsemen, and royal portraits show the influence of Dutch painting and engraving, as will be noted in Fig. 17. The one exception was the primitive attempt to depict Biblical scenes, often conceived in the mind of the tile painter.

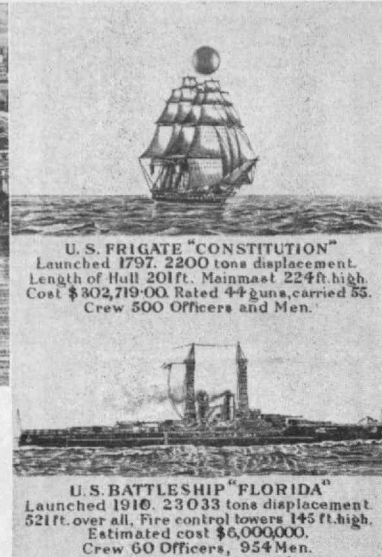
In addition to the single tiles, we find beautiful tile pictures both in the Netherlands and in Belgium. As illustrated in Fig. 15, these show flowers, fantastic birds, and allegorical subjects painted by such well-known artists as Cornelius Boumeester and members of the Aelmis family. One of the most important panels of allegorical design (Fig. 15) was called the House of the Thousand Terrors, and depicted a lamb standing in the midst of four snarling wild beasts.

Dutch tiles were shaped by pressing the buff clay into a square mold, with pegs protruding at the corners to hold the tile in place while its edges were trimmed. The thickness of the tiles varied from five-eighths of an inch to one-quarter of an inch in the later tiles of the Eighteenth Century. Pinpricked de-



E. Stanley Wires

Fig. 19. In the United States, the Jones, McDuffee and Stratton Corporation issued annually, from 1881 to 1929, a Wedgwood tile calendar (above, left, and right). One of these, dated 1916, showed the M.I.T. buildings in Cambridge (center).



Dutch craftsmen had come to England in the late Sixteenth Century, but it was not until about 1690 that the old peasant industry was revitalized a century later, upon the arrival of the Dutch brothers John and David Elers. They were of noble family and their father had served as ambassador to several courts of Europe. Their pottery was at Bradwell Wood, a lonely spot in Staffordshire, where they discovered clay of superior quality. It is said that they attempted to preserve the secret of their formulas by employing stupid and ignorant workmen. Their precautions were of little avail, for a potter, Astbury of Burslem, feigned idiocy, obtained employment, and stayed until he had mastered all of their secrets.

Although the Elers brothers were largely instrumental in developing English Delft it is an interesting fact that the oldest specimen of blue painted ware made at Delft was signed by an Englishman — Tome Jansz, a Dutch spelling for Tom Jones. Early in the Eighteenth Century, the manufacture of tiles and pottery became one of the principal trades of Liverpool, Bristol, and Lambeth. Tiles for fireplaces were exported in quantity, and large panels of painted tiles, as shown in Fig. 18, were made for home decoration and house signs.

Thomas Shaw, Richard Chaffers, and Zachariah Barnes were well-known names, but it was John Sadler, an engraver, who invented the idea of transferring prints made from copper plates on tiles and pottery. Sadler got his idea from watching children apply waste prints to pieces of broken earthenware and, once the technique was perfected, it was applied to the printing of many five-inch-square tiles. John Sadler's association with Josiah Wedgwood came about through the fact that they both had perfected processes destined to bring pleasure to the common people, and by 1761 Sadler undertook the work of decorating Wedgwood's creamware. At that time he admitted the printer, Guy Green, to partnership.

The printing of tiles was divided into four periods: the Woodcuts, 1756-1757; the Sadler period, 1757-1761; the Sadler and Green period, 1761-1770; and the Green period, 1770-1789. Most of the tiles were printed in black and red, but purple, green, and blue were

used to a limited degree. About 250 designs have been recorded, and, of these, 20 were signed by Sadler. The subjects cover scenes of gallantry, satire, sports, landscapes, fables, and two series of actors and actresses portrayed in their principal stage roles. One of these series, including about 40 subjects, was printed in 1780 by Richard Abbey, formerly apprenticed to Sadler and Green.

As to the source of the prints from which the copper engravings were made, the author is indebted to his friend G. E. Bryant of London for the following information: — The early woodcuts are after J. E. Nilsson, an Augsburg engraver; the Chinese subjects are after Jean Pillemont (1759); the Aesop's Fables are after Barlow and Croxall (1722); the theatrical tiles are from Bell's Theatre (1776-1778); and various other subjects are from prints by Charles Mosley (1750) and Major and Paul Ferg (1754).

The Liverpool tiles were shipped in large quantities to the American colonies and were used as fireplace facings in colonial homes of the pre-Revolutionary era. Examples of such work may be seen in the Henry Wadsworth Longfellow House in Cambridge, Mass., the Jeremiah Lee House in Marblehead, Mass., and in the Isaac Royall House in Medford, Mass. Tiles in the Old Boston State House, taken from the residence of Governor Hutchinson, are also Liverpool tiles.

The demand for English tiles was so great that noted potters, such as Thomas Whieldon, made landscape and figured tiles by the salt-glaze process, and even Josiah Wedgwood, in the late Eighteenth Century, executed painted tiles for dairies and summer houses, much in fashion at the time. Mrs. Charles P. Gorely, an authority on the life and work of Josiah Wedgwood, has given the writer data from a letter written by Wedgwood on June 1, 1779, as follows:

Those tiles are made for the dairy of Sr. Henry Harpurs, & the agreement for the price with Sir Henry was, that they should come as cheap, *p square yard*, as the Liverpool plain tiles which are sold at 2/6 P doz, or cheaper if possible. The tiles made at Etruria are 7 inches square, consequently each contains 49 square inches. Those made at Liverpool are only 5 inches. The contents of each 25 square inches; so that one dozn of the former



E. Stanley Wires

Fig. 20. Examples of the Nineteenth Century tile industry in the United States are displayed above. The Horses of Achilles (lower center) was made by Hugh Robertson, Chelsea Ceramic Art Works. The tiles at lower left and lower right were also made by the Chelsea Ceramic Art Works. The remainder of the tiles exhibited above were designed by Arthur Osborne of the Low Art Tile Works, Chelsea, Mass.

covers nearly as much surface as two dozen of the latter, & have greatly the advantage over them in several respects from being so much larger.

By the Nineteenth Century, the tile industry entered a commercial stage where quantity production began to be an essential of the business. Typical of the times was the company founded by Thomas Minton at Stoke. By 1836, Herbert Minton, his son, and two nephews, Michael Hollins and Colin Minton Campbell, became proprietors of the business which soon became a most important factor in the modern tile trade. Mr. Minton was not only a manufacturer of tiles but he was a diligent collector of old tiles, and many of his friends collected tiles for him.

About 1840, Richard Prosser of Birmingham invented a press to compress clay dust between metal

dies. The Minton Company bought the patent, which is the basis of the present industry. When Herbert Minton died in 1858, his firm employed about 1,500 people.

Other important manufacturers of English tiles were Maw and Company, Dunnill and Company, the Campbell Brick and Tile Company, Henry Doulton and Company, and T. and R. Boote. Josiah Wedgwood and Son again manufactured tiles from 1870 to 1902.

Development of the Tile Industry in the United States

In the late Nineteenth Century the tile manufacturers of England and Scotland had established numerous sales agencies in the United States. Many

tiles were imported for fireplace mantels, and tiles showing historical pictures were used for advertising purposes. The clothing store of Macullar Parker Company distributed many English tiles, and the Jones, McDuffee and Stratton Corporation issued annually, from 1881 to 1929, a Wedgwood tile calendar. These tiles also showed many important New England subjects, among them being the M.I.T. buildings in Cambridge, as may be seen in Fig. 19.

The first tiles produced in the United States were probably made about 1845 at the factory of Abraham Miller in Philadelphia. Edwin Atlee Barber* in his book, *The Pottery and Porcelain of the United States*, tells us that Mr. Miller was making octagonal spittoons, which he cut in half and utilized as a wall tile decorative border around the ceiling of his office. His pottery also produced small quantities of mottled paving tiles and facing tiles for exterior use.

In 1853 the United States Pottery of Bennington, Vt., produced enough inlaid tiles to cover the floor space under their exhibit at the Crystal Palace Exhibition in New York.

In 1872, James Robertson, a Scotch potter who had arrived on the old sailing vessel, *Lord Mulgrave*, in 1853, joined his two sons to establish the Chelsea Ceramic Art Works in Chelsea, Mass. This company claimed the distinction of making the first pressed clay tiles in the United States. Examples of early American tiles appear in Fig. 20.

In 1876, the Centennial Exposition opened in Philadelphia. Tourists were advised to allow three days to cover the 75 acres of buildings and 25 miles of walks. The elaborate European tile exhibits stimulated great interest, and shortly after the close of the Exposition, tile factories were erected in several states. Typical of this early expansion was that of the American Encaustic Tiling Company, Zanesville, Ohio, founded in 1875. This company was the pioneer in quantity floor and wall tile production, and numbered among its designers Leon and Paul Solon — sons of the noted English ceramist. By 1930, it controlled the largest tile organization in the world, but later succumbed.

Since its origin a century ago, the tile industry in the United States has made spectacular growth; its 50 factories doing an annual business of \$60,000,000 at least. From the year 1900, when only the wealthy could afford a tile bathroom, we now find that tile is accepted as a desirable material in public and industrial buildings, as well as in most of our homes.

The Seventeenth Century Guild of the Netherlands has been replaced by our unions, and the Tile Council of America represents 80 per cent of the industry. Research programs are being established and new techniques developed. Typical of the individual members of the Council is the Cambridge Tile Manufacturing Company of Cincinnati, Ohio. This company, realizing the importance of color, has retained the services of the well-known color consultant, Faber Birren, and in matters of design the company consults with the Institute of Contemporary Art of Boston.

The development of decorative tiles in the United States has followed the architectural trends, and previous to World War II considerable progress had been made in the production of decorative tiles.

* New York: G. P. Putnam's Sons, 1893.

One of the earliest potteries was the Low Art Tile Company of Chelsea, Mass., founded in 1878. In a little more than a year after it started, this company entered a competition at Crewe, Stoke-on-Trent, and won the gold medal for the best series of art tiles over all the important manufacturers of England. This record, probably unsurpassed in ceramic history, shows the rapid development of the industry in America. Other notable potteries specializing in ornamental tiles were the Rookwood Pottery, Cincinnati; the Grueby Faience and Tile Company, Boston; the Mueller Mosaic Company, Trenton; the Moravian Pottery and Tile Company, Doylestown; and Gladding, McBean and Company, Los Angeles.

Tile Club

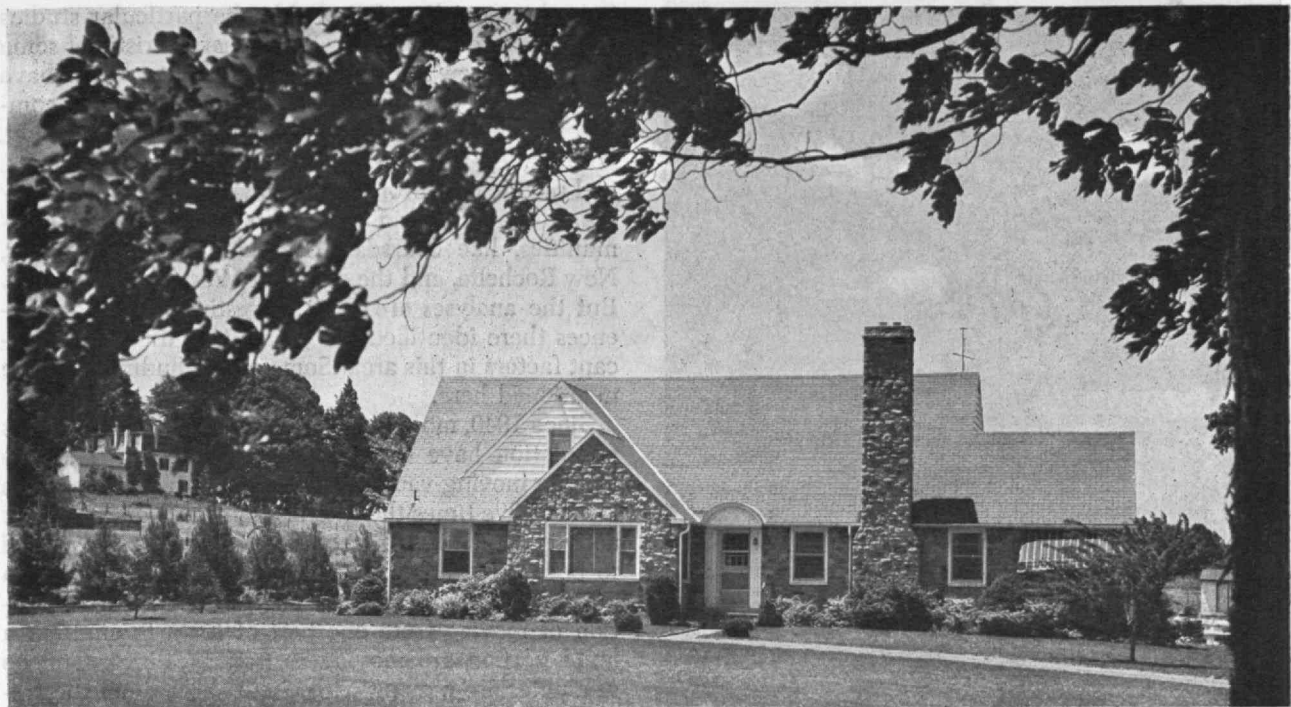
One can hardly conclude this history of tile decoration without reference to the work of the Tile Club, 1877 to 1887. The club was composed of young American artists in New York who sought a common ground of fellowship and discussion. The medium selected for their expression was painting or modeling on tiles. Originally planned with a membership of 12 artists, the club grew to some 30-odd. Each member was given a nickname and we find in the early roster: the illustrator, Edwin A. Abbey (The Chestnut); the sculptor, Augustus Saint-Gaudens (The Saint); the writer, F. Hopkinson Smith (The Owl); the painter, Winslow Homer (The Obtuse Bard); and the architect, Stanford White (The Beaver).

On Wednesday nights the Tile Club met at members' studios, and painted on 8×8-inch white tiles, after which a light refreshment was served. The regular evening meetings were supplemented by weekend sketching expeditions, the accounts of which can be found in the old *Harper's*, *Scribner's* and *Century* magazines. This group of notable painters, sculptors, and decorators saw in the use of tile decoration a very personal expression of their talents.

For a large part of the information in these articles the author is indebted to those whose works are listed below.

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H. Armstrong Roberts

The nervous release of getting away from the hurly-burly of the big city, to sleep and play in an environment which is closer to nature, is surely one of the factors which explains the suburb.

Today's Challenge— TO THE FAMILY IN SUBURBIA

By KARL T. COMPTON

THE suburb is not a new phenomenon. The writer recalls reading about the suburbs of ancient Rome. In his very interesting book, *The Culture of Cities*,* Lewis Mumford quotes from the English *Courier* in describing the Sixteenth Century suburb as follows:

"The manner of most gentlemen and noblemen also is to house themselves (if they possibly may) in the suburbs of the city, because most commonly, the air there being somewhat at large, the place is healthy, and through the distance from the body of the town, the noise is not much; and so consequently quiet. Also for commodity we find many lodgings, both spacious and roomy, with gardens and orchards very delectable. So with good government we have little cause to fear infection there as in the very country; our water is excellent and much better than you have any, on ground and fields most pleasant."

Supposedly, the basic lure of the suburbs now is much as it was then. But two or three new factors have entered in. One is primarily sociological: the great increase in population and its centralization. The others are technological or at least made possible by technological developments — the expansion of modern transportation and communication which have vastly extended the area feasible for suburban

living, and the techniques of home construction which have put suburban living within the means of great groups of families of the so-called middle class, as distinct from the noblemen and gentlemen as those terms were understood in the Sixteenth Century. In other words, the suburb has become vastly bigger in total scope, and much more democratic.

Another observation adds to the background of our thinking. It is that a suburb is not a unique type of community, any more than a mammal is a unique type of animal. A mammal may be a mouse, or it may be an elephant. A suburb may be a small, semirural community, or it may be a Levittown, or anything between.

By a stretch of definition, I may have lived in a suburb during my residence in Princeton. That university town, then of about 5,000 population, was a desirable residence for people who desired such an environment for their families — and who did not have to punch the time clock in New York or Philadelphia. Consequently there was a tendency for wealthy people to move in; they could outbid the college professors for the available homes — a situation which was aggravated by the fact that the town was surrounded by large estates and had no place to grow. (This situation was subsequently eased by the breaking up of some of the estates and by the increased

* New York: Harcourt, Brace and Company, 1938.



Photo by Josef Scaylea from A. Devaney, Inc., N. Y.

Our physical and nervous health require that we take time off once in a while to go camping, fishing, or boating.

dependence on the automobile, which could quickly circumvent the barriers.)

The story is told of one of these wealthy residents, whose wife was very conscientious about getting him off in the morning in time to catch the commuting train for New York. One morning she had an especially difficult time to get him up and off, and she only did so by sending him off without his breakfast. Then, with relief, she set about her other morning chores. What was her surprise, a half hour later, to come into the dining room and see him there calmly eating his breakfast. She wanted to know what had happened. "Well," he said, "it just occurred to me that I own the bank, and so they can't fire me."

This story may stir some experiences in the memories of some of you, whether or not you own any banks.

My point in mentioning the diversity of types of suburbs is that it is probably hard to generalize on the problems of Suburbia. The suburbs in Westchester County are rather different in character from many of those on Long Island, for example, or in another way, from those surrounding London. But just as all mammals, from the mouse to the elephant, have basic characteristics in common, so do suburbs; and it is these basic characteristics, as they affect family life, that are the subjects of our interest.

There was a very interesting series of four articles by William H. Whyte, Jr., in the May, June, July, and August, 1953, numbers of *Fortune* magazine dealing with the characteristics of suburban living. They were entitled: "The Transients," "The Future, c/o Park Forest," "The Outgoing Life," and "How the New

Suburbia Socializes." Probably the particular studies there reported are more exactly characteristic of some of the big new suburban developments which have sprung up as brand new communities under the combined stimuli of postwar pressure for new housing, large-scale, real estate commercial developments, and the ideas of professional town planners than they are of the older and more stabilized suburban communities, like Scarsdale, Larchmont, White Plains, New Rochelle, and the others of Westchester County. But the analyses are very interesting, and the influences there identified are without doubt also significant factors in this area. Some of the findings may be mentioned here.

Since 1940, more than three-quarters of our nation's population have changed their addresses. The five leading moving-van firms are moving families at from three to five times the rate of their immediate prewar activity. Seven out of 10 of these families are expected to be moving again within five years. Most of them are in the 25- to 35-year age group. It is not just a question of moving from one part of town to another; a large portion are moving to new localities. College graduates are moving with about three times the frequency of the noncollege group. What is the explanation of these facts?

Large corporations, plus governmental agencies including the armed forces, account for more than 70 per cent of these moves. In the case of corporations, this is part of a program of broadening the base of experience, and at the same time trying out for adaptability in new jobs, their younger managerial personnel. Whyte lists, as typical of these migratory groups, young industrial civil servants, technicians of society, junior executives, research workers, young corporation lawyers, engineers, salesmen. They are organization men, and all on the move.

In some cases, this rapid turnover breeds some antagonism between the young groups on the move and the older, more permanent residents of the communities. This takes tactful dealing and behavior on both sides, and is a point to which large corporations should give very careful attention when they contemplate moving a large group of new personnel into a relatively small community.

One of the unexpected phenomena associated with this mobility is the fact that these young transients are not bothered by the instability and loneliness which might be expected to result from their frequent shifts of location. On the contrary, they have exhibited an extraordinary interest in community affairs and in each other. They tend, more than the older residents, to become joiners in community enterprises. They help each other out in the care of children, they are actively concerned with the educational, recreational, and civic affairs of the communities. As a matter of mutual self-protection, there is little tendency to "put on the dog" and try to "keep up with the Joneses" — or a little ahead of them. In these vibrant new communities there are many opportunities for leadership, and a survey under the auspices of the General Electric Company finds, as might have been expected, that the young people who have demonstrated leadership talent in the affairs of these communities are preferred "good bets" for advance-

ment in the managerial staffs of their employing companies.

The social groupings within these new suburban areas are determined, of course, by a variety of factors: the natural interests of the individuals, their character, and so on. But, according to Whyte's study, "It is the children who set the basic design; their friendships are translated into the mothers' friendships and these, in turn, into the families'." This conclusion is demonstrated by such observed facts as these: Where there is a through traffic street which children are forbidden to cross, the family friendships tend to group on one or the other side of the street; not to cross it. Where there is no traffic hazard, this is not true. Where there are play lots, the family acquaintances tend to group around these lots.

Another characteristic of these communities is the emphasis which parents place on the function of the schools to provide the pupils with a strong sense of citizenship, or group adaptability and co-operation, even at the expense of some sacrifice of book learning. In this connection the writer is reminded of the very sage observation of a young English school teacher whom we met in London last fall.

A group of us had been discussing the relative strengths and weaknesses of primary and secondary education in England and the United States. Some of us had been impressed, during World War II, by the assumption on the part of all the British children, who came to our country to escape the bombing dangers in London and elsewhere, that they would be academically one or two years ahead of our children of the same age. This attitude is generally held in Great Britain — and with some justification.

This young teacher from England had spent some months in the United States, studying the workings of our public school system, and had written a short article giving her conclusions. In it she said essentially:

"British criticism of the American public schools seems to be based on the assumption that the purpose of the American schools is to train good little Britishers. This is not the Americans' problem: it is to wield into a cooperating working group the greatest number of people of widely diverse backgrounds and origins which has ever been brought together in so short a time. This the Americans are doing magnificently, and in this program the American public schools are playing a major role." She went on to say also that, while this special job did result in some retarding of our pupils, academically speaking, in their earlier grades, as compared with British children of the same age, it was her observation that this gap was completely overcome by the time the pupils had reached the college levels.

This experience is mentioned because it seems to be somewhat analogous to the problem of welding together the diverse new groups who are brought together as children in our suburbs. The experience of adaptation, and the mingling of people of different backgrounds and often from different parts of the country, cannot but have its later influence in the developed understanding of different people, of differing points of view, and the ability to work together in the vast complex of interests and backgrounds which make up our nation.

One phrase in Lewis Mumford's book struck me especially, and set me to thinking. It was: "The romantic suburb was a collective effort to lead a private life." This is a nice, neat phrase. Perhaps it was true in days gone by. But is it a true description of the urge which takes people from the cities to the suburbs today? What are the reasons? They are doubtless many, and each suburbanite must have considered them, as they apply to his own situation. Let us try to analyze a few of them.

In the first place, it is doubtful if the real reason is an "effort to lead a private life." Perhaps the most private life imaginable is that of a hermit, and this is certainly not the definition of a suburbanite. The next most private person, probably, is the city dweller in a hotel or apartment house. To be sure, there are plenty of people around — too many — but as a rule the horde is too vast to invite selection of friendships on the basis of propinquity or common interests.

The experience of a friend whose son had recently taken a room in an apartment house may be cited. When the young man came home for Christmas vacation, his father asked him what his neighbors were like, and was surprised to learn that he had not become acquainted with them. To his father's comment that it would have been the natural thing to do to meet them, the young man replied, "But father, why should I try to meet them? I might not like them." In this particular case it happened, by rare chance, that

The problem of afterschool facilities and activities for children ranks only a little below the schools in the importance of its influence on the wholesome development of young people.

Harold M. Lambert





H. Armstrong Roberts

Of essential importance to a community is that of having an excellent school system.

the father was later comparing notes on their respective sons with a man whom he met in another city, and it developed that their two sons had the adjoining rooms in this apartment house. But each had gone his separate way.

It may be that, rather than an effort to lead a private life, the satisfaction of the suburbanite is in being a part of a community whose size is within his powers of association. In the smaller community he can have some personal influence in community affairs; in the big city he is just an atom. In the suburb he can help to mold the environment in the direction of his tastes and his desires for his family; in the big metropolis he is but one of hundreds of thousands of voters. In other words, a suburban community is of manageable size; it is a moot question whether our very large cities are really capable of wise management.

There is another factor which undoubtedly is part of the urge to move from the city nearer to the country — an anthropological factor. An Abercrombie and Fitch catalogue of a dozen or more years ago had a philosophical preamble which expressed an interesting thought with an argument that went as follows:

For countless generations our prehistoric ancestors lived a primitive life, in intimate contact with Nature. They lived in small groups, in the woods or caves. For reasons of self-preservation, they had to be alert to all the phenomena going on in the world of plants and animals, of fishes and insects, of weather and seasons around them. All of this was deeply ingrained in their genes and nervous systems.

Now in our technological age, the social environment is greatly changed. People live and work together in immense groups. There is a new pressure to life, and the pressure is of new types. All this has come about in the period of a very few generations, as compared to the almost infinity of time during which our fundamental physical and nervous characters were developed.

The argument was advanced, therefore, that our physical and nervous health require, from time to time, a period of relief from the new tensions and the refreshment of going back to some aspects of the en-

vironment which was our long heritage. Therefore, say Abercrombie and Fitch, take time off once in a while to go camping, or fishing, or canoeing — and we will help you with your outfitting. Being one who enjoys such things, the writer quite approves.

Some part of the same argument can apply to living in the suburbs. The nervous release of getting away from the hurly-burly of the big city to sleep and play in an environment which is closer to Nature, even if this environment is not exactly primitive, is surely one of the factors which explains the suburb.

The writer recalls a personal experience many years ago which gave him a bit of a shock. I had occasion to be taking a long trip by train with my little daughter, then just past four years of age. In trying to keep her amused, and for her education, I was pointing out various things which we saw from the train, and discussing them with her. We passed a field in which several horses were grazing. I asked her what they were doing, and she replied, "They are eating worms." Then and there I decided that her education in the facts of life had been sadly deficient, and that she needed more contact with Nature, in the country.

However all these things may be, the really important factor leading to the suburbs is the welfare of the family, and especially of the children. This seems to be the conclusion of every student and commentator whose statements the writer has read or heard. A few examples are quoted.

Lewis Mumford says: "Women and children first is a sound motto; and the instincts which prompted this exodus by the middle classes were sound; life was actually in danger in the new factory slum, and the merest counsel of prudence was to flee — flee with all one's goods, as Lot and his household had fled before the sultry hell of Sodom and Gomorrah . . . In a sense, the suburb was woman's special contribution to the new urban complex: for the suburb alone met the needs of childbearing and child rearing."

The Public Administration Service, in 1948, published a report on Planning the Neighborhood. It was the work of a committee of city planners, under the chairmanship of our colleague, Professor Frederick J. Adams, Head of the Department of City and Regional Planning at M.I.T. This report gives, in considerable detail, the standards for community development which represent the best experience and thinking, to date, by these students of the problem. One thing which is significant, for our present purpose, is their acceptance of what is technically known as the "neighborhood" concept as the most convenient unit for planning on a scale larger than the individual residence. This "neighborhood unit" is defined as the area served by an elementary school.

This same concept is accepted by the distinguished planner, Catherine Bauer, as the basic unit for consideration by sociologists and city planners. She states that this neighborhood unit is defined by the area and population served by an elementary school, and that this is usually thought of in terms of a population between 2,000 and 8,000 and with an area of 50 to 250 acres, depending on the density of the population, at least in a fairly well built-up area.

(Continued on page 210)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

How Christmas 1953 Came to Tech

OLD Scrooge had never heard of Technology and, for that matter, neither had Bob Cratchit nor Tiny Tim. But had these illustrious characters from Dickens got a glimpse of the Spirit of Christmas 1953 which permeated the Cambridge campus and its environs, under the influence of good-will projects initiated by M.I.T. undergraduates, their eyes would have shone. They would have understood — and of course they would have approved — the spirit of doing for, and of giving to, others which motivated the efforts of Institute undergraduates. And certainly they would have rejoiced at the many successful efforts on the part of groups as well as individuals, to spread the true Christmas spirit within the Tech community. Perhaps, Scrooge, most of all, would have wondered how it was possible for anyone to look upon embryo engineers and scientists as pre-occupied with material matters and lacking in the human touch.

True enough, the Christmas tree and holiday decorations set up in the main lobby had been the practice for years, although this year the Institute Committee took on the responsibility for the decorations. So too, there was no novelty in the hour of singing Christmas carols and in the annual Christmas message from James R. Killian, Jr., '26, President of the Institute, which, this year, took place on the morning of December 18, just before most of the students left for their Christmas vacations.

But somehow, Christmas 1953 was different from what it had been in previous years. For a brief spell, at least, the wearisome "dialectic materialism" which has been forced upon one-sixth of the world's population was forgotten as thoughts turned to the change wrought in man's spirit by events taking place in Bethlehem nearly 2,000 years ago. A conscious effort was made to create an aura of understanding friendship for many who might otherwise feel lonely and forgotten, and once more the discovery was made that it is more blessed to give than to receive. It was the first time in which residents of dormitories joined the fraternities to take part, as an integrated Tech community, in bringing Santa Claus to several hundred children in the metropolitan area, and the 1,000 or more students who participated found a new meaning in the awe, wonderment, and joy which was registered in the faces of their young guests.

Believing that a latent spirit of co-operation merely required a bit of leadership, Dean L. Jacoby, '54, President of the Institute Committee, Albert A. Ward, Jr., '54, President of the Interfraternity Conference, Charles J. Masison, Jr., '54, and Peter B. Brand, '55, took the leadership in bringing Christmas spirit into better focus than in the past.

Sparked by this group of leaders in undergraduate affairs, students spontaneously responded in the op-

portunity to "do for others," and a twofold program emerged. There was, first of all, a program of creating, through usual seasonal decorations, a physical means for being reminded of the Christmas spirit. But the significant part of the program was the development of the spirit of giving, to others, that warmth of human friendship which makes life worth while.

As a result of such leadership, the Interfraternity Conference inaugurated and carried out a series of Christmas parties for worthy children on Saturday, December 12. Of the 26 fraternities at M.I.T. at least 16 set aside the period from 2:00 P.M. to 5:00 P.M. on December 12 to play hosts to children between the ages of four to 12, and to brighten the holiday for several hundred youngsters whose expectations for a visit from Santa Claus were somewhat feeble. It was a novel experience for would-be engineers and scientists to cast aside their slide rules, to use their own cars to pick up several hundred youngsters from various homes and hospitals in metropolitan Boston, and to bring these eager but shy children to fraternity houses for a joyous afternoon to play games, to see a real Christmas tree with decorations, and to have a visit from Santa Claus. It was something new for most Technology students to entertain the younger set, but in these well-meant if inexperienced intentions, the students were aided by their ladies. It was a novel experience, too, for engineering students to learn the names of — and something of the backgrounds and childish wishes of — their young guests, so that one of the bewhiskered brothers, in traditional red and white costume, could make remarks appropriate for Santa Claus as he handed out candy or gifts to the wide-eyed youngsters. It was also a matter of temporary consternation to discover one or two heads missing as the parties came to a close, and to find that one of the youthful absentees was a four-year old

Mr. and Mrs. Jan Arkuszewski celebrate a real American Christmas when Santa Claus (Joel B. Searcy, '57) unexpectedly visits them and their three children — Alexandra, Alena, and Richard.
Boston Herald



who was happily entertaining himself by examining the mechanics of a polyphase duplex slide rule.

The dormitories, too, had their share of bringing cheer to Boston children. Decorated with wreaths and other trimmings appropriate for the season, Baker House, Burton House, and the East Campus were ready for their part of the festivities which paralleled that of the fraternities.

On the afternoon of December 12, student residents of Baker House visited a hospital for retarded children up to 16 years of age, and brought to them a friendly spirit as well as gifts. On the same day, residents of Burton House and of East Campus took their gifts to local hospitals and houses for children in the nine- to 12-year age bracket. Students taking part in these activities enjoyed much the same experiences as were encountered in the fraternities as youngsters who might well feel forgotten became "king for a day."

On the evening of December 12, the dormitories held dance parties, which were turned into co-operative projects of trimming Christmas trees and carrying out other decorative tasks as a community operation.

Nor was the Christmas spirit exclusively limited to administering to the needs of pre-teenagers. On December 16, an undreamed of Christmas — in free America — materialized for Jan Arkuszewski, his wife, Irene, and their three yellow-haired children, aged two, four, and six years. Mr. Arkuszewski had served in the Polish Army, was captured at Warsaw, spent years in a Nazi concentration camp and, on April 23, 1945, lost both his legs in a night bombing raid. He came to the United States about a year ago and was making a brave new start in a new country when he was struck by a hit-and-run driver in mid-November. On top of these misfortunes, it looked as if Santa Claus might have difficulty finding the tiny West End apartment where the Arkuszezskis live.

But Mr. Arkuszewski is employed at Walker Memorial and hence was known to many Tech students living in East Campus. These students decided that Jan had had enough trouble for a while, and on December 16, four undergraduates aided Santa in distributing dolls, teddy bears, and other gifts selected to delight the fascinated youngsters. Joel B. Searcy, '57, in red and white costume of the season was assisted by Messrs. Ward and Brand, and — most of all — by Jan Krizik who acted as interpreter. It was Mr. Krizik who conveyed to the rest how Mr. Arkuszewski felt about the whole matter. The gist of Mr. Arkuszewski's remarks, excitedly expressed in German, was that it's wonderful to be in America and to be free again.

On the evening of December 17, a program of choral caroling (aptly termed "choraling") got under way at the President's House, at the residence of the Dean of Students, and at the three dormitories. Aiding the students in this choraling activity were Mrs. James R. Killian, Jr., at the President's House, Mrs. E. Francis Bowditch at the home of the Dean of Students, and Mrs. Laurens Troost, Mrs. Holt Ashley, and Mrs. Samuel J. Mason, as Faculty residents at Burton House, East Campus, and Baker House, respectively. In addition, Faculty residents held open house for the students in the dormitories who were unable to return to their homes for the Christmas holi-

day and, as a final act of the Christmas season, every effort was made to see that students from foreign countries had an opportunity to have Christmas dinner with some member of the Faculty in Cambridge.

How were these things possible? How could busy students in an environment frequently characterized as "Tech is Hell" find the money, time, and most important, the spirit to put such a program into effect?

Well, the finances were readily taken care of by contributions from the various fraternity houses, and in the dormitories, by contributions from individual students who pooled their resources. The Interfraternity Conference was able to obtain a 20 per cent discount from local merchants in purchasing toys for children and, after all, a little money can go a long way in bringing happiness, especially to children. Perhaps no accurate account is possible, but it seems safe to say that \$500 covered the cost of parties.

The Institute's Administration gave encouragement to the program in which it is estimated more than 1,000 of the 3,500 undergraduates took an active part in one way or another. And when a big job is tackled co-operatively by large numbers, the individual burden is a light one, quite out of proportion to the benefits and joy derived. Names of hospitals and homes in the Boston area where children could be visited, or where they could be called for and delivered, were supplied by the Technology Christian Association.

George E. Russell: 1877-1953

ANNOUNCEMENT of the death on December 11, 1953, of George E. Russell, '00, Professor of Hydraulics, Emeritus, was sorrowfully received by The Review. For 39 years he was a member of the faculty of the Department of Civil and Sanitary Engineering at the Institute until his retirement in 1943.

Professor Russell joined the Institute staff in 1900 and during World War II served on the Advisory Board of the United States Coast Guard Academy.

He was born in Boston on December 25, 1877, and received the degree of bachelor of science at M.I.T. in 1900. Following a year as assistant in civil engineering, Professor Russell went to New York as designing engineer for the American Car and Foundry Company, where he designed the first noncombustible steel passenger car for use in subways. From 1904-1905 he also taught at Cornell University, and in 1905 returned to M.I.T. as instructor in civil engineering. Professor Russell was promoted to assistant professor in 1907, associate professor of hydraulic engineering in 1913, professor of hydraulics in 1921, and emeritus professor and lecturer in hydraulics in 1943.

When the M.I.T. Hydrodynamics Laboratory and Ship Model Towing Tank was dedicated in June, 1951, Professor Russell was chairman of the afternoon symposium "Hydrodynamics in Modern Technology."

In addition to his Institute activities, Professor Russell served as design engineer for the state's Charles River Basin Commission; traffic and structural engineer for the Boston Transit Commission; civil service examiner for state engineers; and engineering consultant to the U. S. Navy, to industry, and to many New England municipalities.

(Concluded on page 208)

BUSINESS IN MOTION

To our Colleagues in American Business . . .

About a year ago the president of a great electrical company wrote to his stockholders: "It is probable that in the next ten years as much electrical equipment will be built, sold and installed as has been built and installed in the industry's past 75-year history . . . In fact, the electrical industry must be prepared to grow more than twice as fast as the remainder of the economy." Recent figures forecast confirmation of his amazing prediction. Construction of new electrical facilities during 1953 exceeded \$4 billion, according to reports from utilities operating 92% of the country's capacity and serving 83% of electric customers. Charts of generating capacity and consumption continue to show large increases. Spectacular growth continues, not only in ability to produce electricity, but to transmit and use it.

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power of accomplishment, and new ways to do its tasks better.

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THE INSTITUTE GAZETTE

(Concluded from page 206)

Killian Gives Principal Address at Brandeis Graduate School

TECHNOLOGY's President, James R. Killian, Jr., '26, delivered the principal address at inauguration exercises marking the opening of Brandeis University Graduate School of Arts and Sciences, which was held at the University on Thursday, January 14.

More than 150 official delegates marched in the exercises, including fellows and trustees of Brandeis University and members of the University faculty, six college presidents, 12 college deans, and faculty members representing scores of colleges and universities.

In addition to President Killian of M.I.T., other college presidents who took part in the ceremony, all from New England, were Trentwell M. White of Lesley College, Martin J. Lydon of Lowell Technological Institute, Grover C. Bowman of State Teachers College at North Adams, Royce S. Pitkin of Goddard College, and Alan S. Wilson of Hillyer College. The 12 deans who took part in the inauguration ceremonies all represented colleges and universities in the New England area.

Faculty Member Awarded Educational Exchange Grant

THE Fulbright Committee at the Institute has been notified by the United States Department of State that Gerhard Reethof, '47, of Cambridge, Mass., an Assistant Professor of Mechanical Engineering, was awarded a United States Educational Exchange Grant for 1953-1954.

Professor Reethof will participate in the International Educational Exchange Program as a lecturer in machine design at the Institute of Technology in Helsinki, Finland.

The award is made under the provisions of Public Law 584, 79th Congress, the Fulbright Act. It is one of approximately 375 grants for lecturing and research abroad included in the program for the academic year 1953-1954. As provided by the Act, all candidates are selected by the Board of Foreign Scholarships, the members of which are appointed by the President. Lecturers and research scholars are recommended for the Board's consideration by the Conference Board of Associated Research Councils, which has been designated to receive and review the applications of candidates in these categories.

The funds used for carrying out the program under the Fulbright Act are foreign currencies realized through surplus property sales abroad. Under executive agreements with foreign governments, programs are currently in effect in the following countries: Australia, Austria, Belgium and Luxembourg, Burma, Denmark, Egypt, Finland, France, Germany, Greece, India, Iran, Iraq, Italy, Japan, the Netherlands, New Zealand, Norway, Pakistan, the Philippines, South Africa, Thailand, Turkey, and the United Kingdom.



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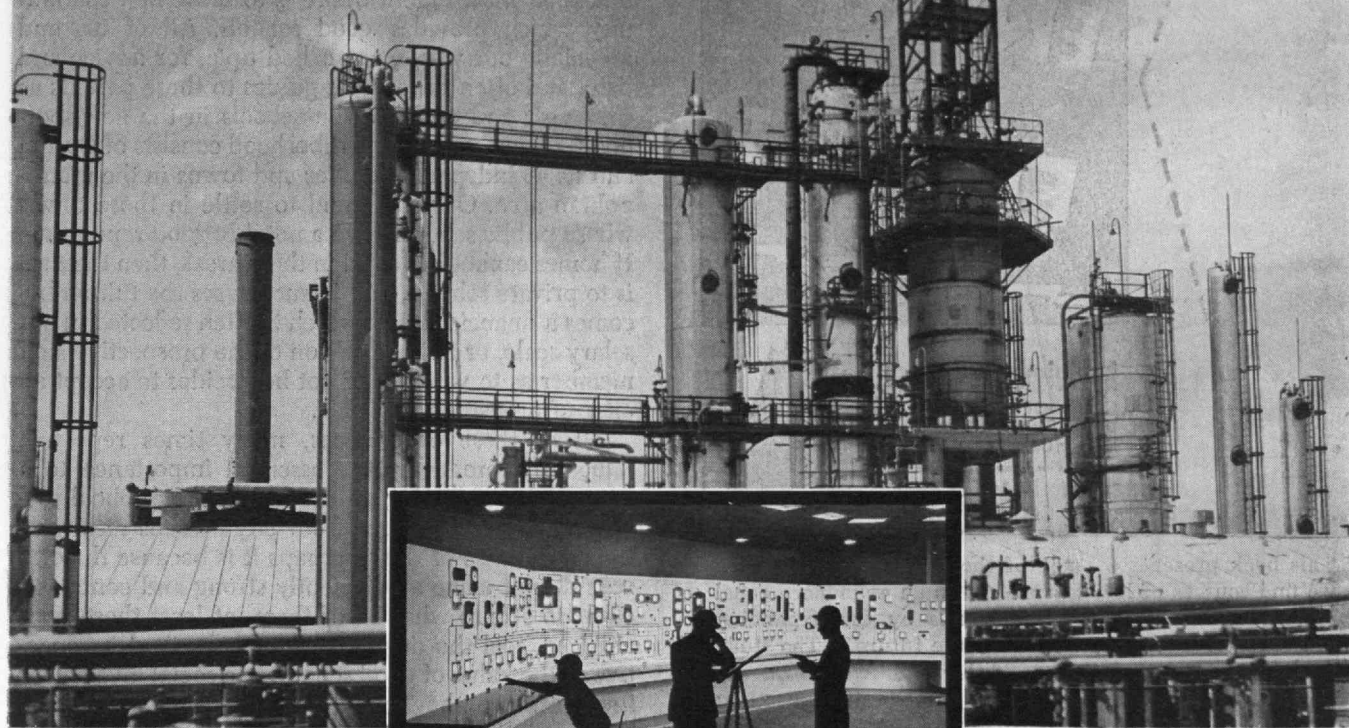


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The author's systematic analysis of the problem includes a review of past population growths in a search for answers to the question: "Is population growth predictable?" Having concluded that it is not, he creates the device of a hypothetical Trustee of Energy, who then asks: "What are the maximum plausible populations of the next 50 to 100 years; and what are the maximum plausible demands for low-cost energy?"

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The writer has had occasion to realize the importance of children and their schools as predominating factors in the choice of residence. At M.I.T., as at every university — or every large organization for that matter — there are every year a number of new staff members who are moving into the community and are looking for residences. Most of them have children of school age. There is no question but that their most urgent desire is to settle in a community which provides good schools. All of us, and especially our wives, are called upon for advice and help, and often to serve as guides to these parents as they visit and evaluate the schools in the neighborhood. In our case the neighborhood consists of Boston and its 43 independent cities and towns in the metropolitan area. Our staff tend to settle in those towns whose public schools have a notably good reputation. If homes cannot be found in these areas, then the turn is to private schools, and in such cases the tuition becomes a financial factor which is often reflected in our salary scale, or in the decision of the prospective staff member as to whether or not he decides to accept an offer of a position at M.I.T.

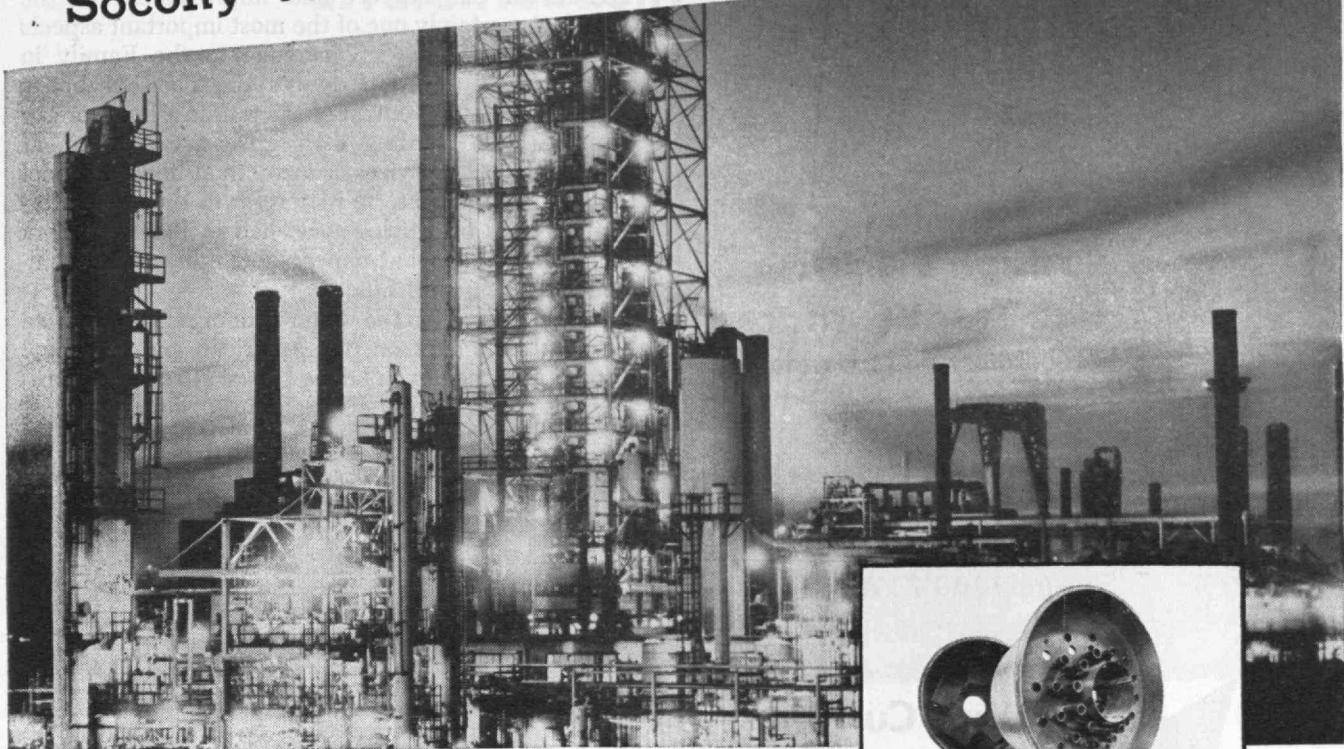
All of these experiences, many times repeated, indicate impressively the essential importance to a community of having an excellent public school system. Why do not some of our city officials recognize the importance of this? Perhaps it is because the citizens do not make a sufficiently strong and concerted effort to secure what all of them, at least those with children, feel the desire for so keenly. And irrespective of the value of good schools as a social investment for the future, they would be a good financial investment for the municipality. A large percentage of families have been willing to pay more for their homes in order to have the benefit of better schools.

This idea of sound financial investment in schools could be given a practical experimental test, as follows. Suppose several dozen residential communities, suburban and otherwise, were selected for the experiment. The effort would be made to select these communities so that they could be grouped in pairs, the two in each pair being as similar as possible in their present status as to size, type of population, economy, tax structure, and environment. By some means, one of the communities of each pair would be stimulated to take vigorous steps to improve its public schools, whereas nothing would be done or said about it in the other community. Then, after five or 10 years a survey would be made of the status of all these pairs of communities.

Based on the experiences described, we may surmise that the community with the improved schools would be found to have prospered more than its opposite number, and that the investment in the better schools would have paid for itself through the increased property values resulting from the added inducement to settle in the neighborhood. The author suggested this as a project for support by a foundation which was looking for new worlds to conquer, but nothing came of the suggestion, though undoubtedly

(Continued on page 212)

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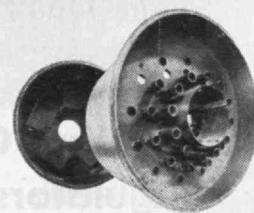


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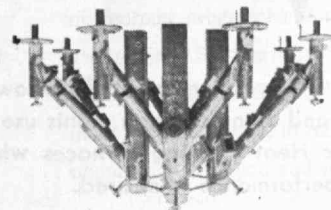
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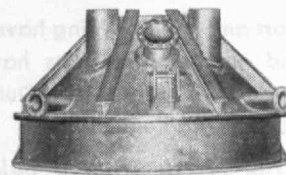
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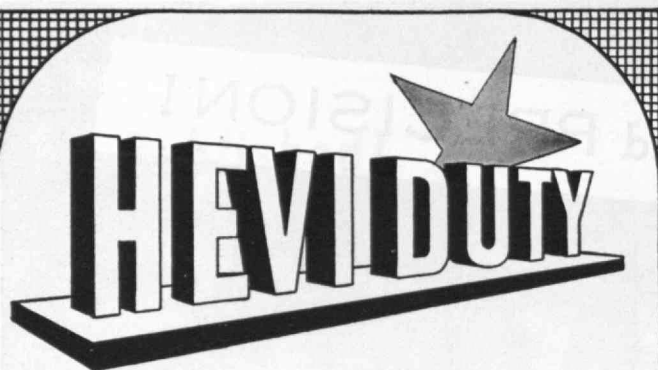
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FAMILY IN SUBURBIA

(Continued from page 210)

it has some merit. Perhaps the proof of the thesis already exists in the experiences of various communities, but has not yet stood out for all to see.

Here, in the support and improvement of the schools, is certainly one of the most important aspects of the topic "Today's Challenge to the Family in Suburbia." If any one doubts the need of better support and improvement of the public schools of our country, even granting their great accomplishment and the devoted services of many thousands of school teachers and officials, he may refer to the very informative series of articles published in the *New York Times* in 1947 by that paper's able educational commentator, Benjamin Fine.

In this connection the writer cannot refrain from an historical comment on our American public school system. As some of you know, I have advocated a program of universal military training to supply at least partially ready military reserves during the existing period of international danger. The opponents of such a program have over and over again characterized it as "conscription, undemocratic and Un-American." Some one told me that these same epithets had been used to oppose the proposal of a universal system of compulsory public school education in our country. One time, when I had a little leisure, it occurred to me to see whether the *Encyclopaedia Britannica* had anything to say about this, and this is what I found. I quote from a section on Education in the United States.

By the close of the first quarter of the 19th century a great struggle for the creation of a series of tax-supported, publicly controlled and directed, and non-sectarian common schools was in progress, and the second quarter of the century may be said to have witnessed the successful conclusion of the battle. . . . Excepting the battle for the abolition of slavery, perhaps no question has ever been before the American people for settlement which has caused so much feeling or aroused such bitter antagonisms. . . . It was likewise the work of a generation to convince the masses that the scheme of State schools was not only practicable but also the best and most economical means of giving their children the benefits of an education; to persuade propertied citizens that taxation for education was in the interest of both public and private welfare; to show legislators that it was safe to vote for school bills; and to overcome the general opposition due to apathy, sectarian jealousy and private interests. . . . the American State

(Continued on page 214)

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FAMILY IN SUBURBIA

(Continued from page 212)

school, free and equally open to all, was finally evolved and took its place as the most important influence in the national life working for the perpetuation of American democracy and the advancement of the public welfare.

(In the above, the term "State school" of course refers to what we call the public school.)

This bit of old history came as quite a surprise for probably we have all come to think of our public school system as an essential part and parcel of our American life, as it is. The fact that it was brought into being against great odds, and that it has functioned so well, on the whole, should make us ever alert to give it our vigorous and imaginative support.

When the children are not in school, they are somewhere else—at home, or at play or some other outside activity. What about their situation then? Their home situation will not be discussed here—for that is the special and intimate concern of every parent—but it may be pointed out that group activities of parents, such as the Parent-Teacher's Association, Mothers' Study Clubs, and the like, offer opportunities for help and guidance. Last September one of the New York papers carried a story about an organized study, by a group in Westchester County on the problem of the afterschool facilities and activities for the children—a subject which ranks only a little below the schools in the importance of its influence on the wholesome development of our young people.

The importance of these out-of-school activities of young people can be evaluated, and they can be wisely directed, in the light of some very fundamental characteristics of children and teen-agers. They have a lot of excess energy, which is bound to find outlet. If there are constructive outlets, that is all to the good. If these are lacking, or insufficiently attractive, then destructive outlets are likely to be the alternative. Most youngsters have a natural "gang" instinct, and this can be turned to advantage, or otherwise, according to the opportunities and incentives. Some children, on the other hand, are not of the sociable, extrovert type who turn naturally to group activities. What can be provided for them? Some experiences which can be related may be suggestive.

There is a strong tendency, in the colleges, to emphasize athletic sports for all, rather than to concentrate on a few winning intercollegiate teams, with most of the college community serving only as rooters

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and to swell the gate receipts. One time the author was discussing this with the Dean of the College at Princeton, and commenting on the great array of athletic fields, tennis courts, and so on. He said, out of long experience, "Since we have had these recreational facilities, the disciplinary duties of the Dean have fallen to a fraction of what they used to be."

When Vannevar Bush, '16, now President of the Carnegie Institution of Washington, was Vice-president of M.I.T., he took quite an interest in the boys who were not athletes, or musicians, or debaters, or social lights. They were a group of individualists who did not find their extracurricular outlets in the great variety of organized student activities. He conceived and set up a "hobby shop," with some materials and tools and a minimum of advisory supervision. This has proved to be a great success, and a wide variety of creative jobs are undertaken here at the initiative of the individual students—model airplanes, models of historic structures or machines, painting, furniture for the home, inventions, and so on. This has provided a constructive outlet for a very considerable group.

Illustrations might be multiplied to prove the value of wholesome competitive or creative activities. To the extent that these can be made available, and "sold" to the youngsters in such manner as to engage their interest and enthusiasm, the major problems of the out-of-school life of the youngsters are solved.

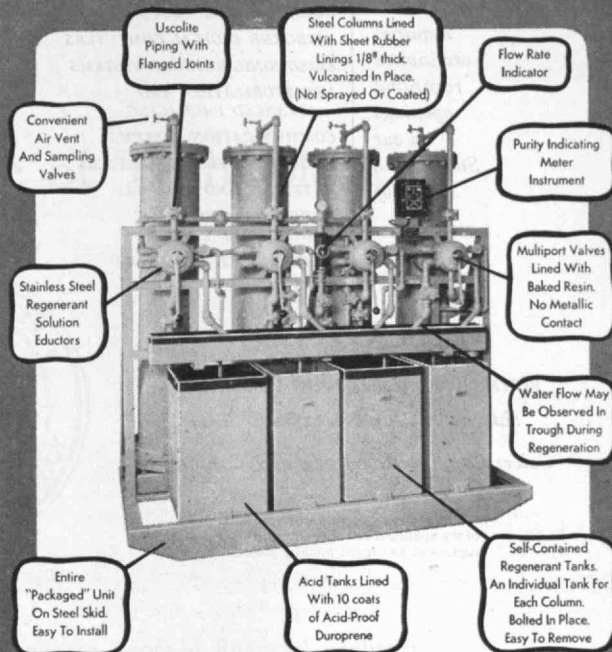
Of course the schools themselves play a very important role in these matters. The so-called "progressive" schools are especially interested, and some people think that some of them overdo this aspect of education at the expense of the fundamentals. However this may be, imaginative attention to these extracurricular matters is certainly an important matter for family concern.

Besides the schools, and especially concerned with the out-of-school activities of our young people are many of the social agencies, like the Boys' and Girls' Clubs, the Boy and the Girl Scouts, the community playgrounds and parks, the movies which may be wholesome or otherwise, depending on the quality of programs, the Y.M.C.A. and Y.W.C.A. and analogous organizations, and of course the churches and their Sunday schools and young people's organizations. All these have their place. Their diversity fits into the diversity of interests and characteristics of the young people who choose to participate in their activities. And, in this connection, there are the community social agencies, such as the Red Feather.

Out of the great variety of problems relating to life in the suburbs, only those which seem to be most important as bearing on the topic of the challenge to the family have been commented on in this article. There are of course many other factors which challenge the suburban family. There is the matter of taxes, and the relation between the tax structure of the suburb and that of the parent city. This is a perplexing subject, for the services and responsibilities of the two are not independent. To a large extent the salaries are earned in the city, and the taxes are paid in the suburb. To this extent, the city suffers financially, politically, and socially by the flight of substantial citizens to the

(Concluded on page 216)

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FAMILY IN SUBURBIA

(Concluded from page 214)

suburbs. This is not to argue that the suburban exodus is individually or collectively improper; the advantages far outweigh the disadvantages. But the results on the central cities do create a problem which is a job for the city rather than the suburb to handle.

Some interesting suggestions for the better handling of the problem within the cities have been urged by William Zeckendorf in an article in the *Atlantic Monthly* of July, 1952. He points out that, if the cities were to undertake a really vigorous program of transforming slum, or "down at the heel," or blighted areas into attractive areas for residence and recreation and wholesome family development, several advantages would accrue. Those forced by circumstances to live within the cities would gain at least something of the advantages of suburban life. Standards of living would improve, and real estate values would rise, and tax rates could become more equitable. Politics would tend to rise above the present level of disrepute. The opportunity which he portrays is attractive. There may be some catches in the argument, at least as regards really large-scale application. Of course some things along this line are already being done. Perhaps the bearing of this phase of the problem on the family in suburbia is simply this: it is definitely to the advantage of the family in the suburbs to have a prosperous and wholesome city as its focus.

Some of the other problems of city and suburb will not be mentioned here, with the exception of a word on community administration which seems to be important as seen in operation in some regions.

In a good suburb of a metropolitan area there are many professional people of high grade and wide variety—lawyers, engineers, educators, business executives, and the like. They are generally very civic minded, proud and concerned with the welfare of their community, and willing to serve it to the extent that their other commitments permit. Many of them have served voluntarily and very effectively in their professional capacities in the affairs of their communities. They have provided a quality of professional service which the community could not buy or hire, and they have done it gladly. Here is one of the advantages of a not-too-large suburban town or city—for in a large city these professional services are so extensive and burdensome that they can only be handled by paid and full-time employees who are elected, or who come in through civil service, or who are politically appointed. Most of these professional employees are good civil servants, and we are all indebted to them for their service. However, there seems to be something very wholesome about a situation in which it is possible for people to give some part of their special talents and time to the successful operations of their communities. In big cities, or in Washington, this is also done through service on special emergency commissions, or while on leave of absence from their regular private positions. Service to the small community, of which men and women are a part, is an exceedingly wholesome thing for all.

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The second aspect of the Institute's financial problem is the need for sufficient new funds to guarantee the continuing support of its long-range program. This need must be met by grants from industry and foundations, by current gifts, and by bequests from individuals.

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89 further applications had to be declined because heavy demand for admission to particular programs exceeded the available facilities. Above and beyond the correspondence so represented, the Summer Session Office responded to 739 inquiries regarding specific programs and to 451 general requests for information. Thus, quite apart from its dispatch of initial printed publicity, the Office of the Summer Session corresponded with substantially 3,000 individuals about Special Summer Programs alone.

The 1,354 actual registrants in Special Summer Programs comprised 1,304 (96 per cent) men and 50 (4 per cent) women. Of this 1,354 total, more than two-thirds (930 = 68.7 per cent) were drawn from industrial companies, the remainder coming from government (267 = 19.7 per cent) or from other research and educational institutions (157 = 11.6 per cent).

From the viewpoint of normal geographical location, these 1,354 registrants came not only from 45 out of the 49 recognized geographical units of the United States, but also included 83 representatives of other areas, namely: Canada, 50; Canal Zone, 1; Cuba, 1; England, 3; France, 15; Honduras, 1; Pakistan, 1; Puerto Rico, 5; Mexico, 2; Sweden, 1; and Venezuela, 3. None of these overseas visitors include any Foreign Student Summer Project representatives. Considering the relatively short duration of the Special Programs, together with the fact that absolutely no publicity was sent abroad except in response to specific requests, such a high proportion of foreign representatives appears as a high compliment to the Institute reputation.

Of the 1,271 registrants from the continental United States, the widespread distribution is also impressive. New England furnished only 272 (21.4 per cent), while of the others, 826 (65.0 per cent) came from west of New England but east of the Mississippi River, 89 (7.0 per cent) from the West Central and Mountain areas, and 84 (6.6 per cent) from Pacific Coast areas. Only four states — Arkansas, Idaho, Mississippi, and North Dakota — were unrepresented.

The average age of the 1,354 Special Summer Program registrants was 34.9 years. The oldest age average for any individual program was 42.5 for the Westinghouse Science Teachers Program; the youngest age average was 31.5 for Technique of Infrared Spectroscopy. The oldest individual registrant was 71; the



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youngest, 21 (five cases). Registrants 50 years old, or above, numbered 67; those below age 25 numbered 40.

While the professional experience of the 1,354 registrants does not lend itself to numerical representation, the extent of their previous academic training is suggested by their degrees. Of the entire group, only 144 (10.6 per cent) held no college degree although many of these had some college enrollment; 748 (55.2 per cent) held at least one bachelor's degree; 340 others (25.0 per cent) also held master's degrees; while 122 additional cases (9.2 per cent) also held doctor's degrees. It thus is evident that although the lack of a baccalaureate degree is no bar to admission to such programs, to a great preponderance (89.4 per cent) of registrants these programs were in the nature of graduate or postdoctoral study.

From the viewpoint of the size of the several Special Summer Programs as measured by the number of registrants, the largest single course was that on Noise Reduction (112), followed by Digital Computers (106), Strain Gages (84), and Automatic Control of Aircraft (82). The smallest individual program registration was 10 in Textile Research. Two of the 26 programs were specifically restricted in size, namely, that on Control Problems of the Executive, which accepted 25 and regretfully declined 13, and that on Mathematical Problems of Communication Theory, which accepted 48 and had to decline 24.

Of the 26 Special Programs offered in 1953, 10 were entirely new, 3 were broadly similar to previous programs of earlier years, and 13 represented repeats of 1952 or (in a few cases) earlier years.

Publicity for the Summer Session

In view of the increased scope and wider audience of the M.I.T. Summer Session, it is evident that corresponding changes have been required in the methods for making known its offerings for a particular summer. Part of the recent sharp increase of interest is almost certainly due to the word-of-mouth testimony of participants in previous sessions. Because this form of recommendation is especially persuasive, special effort is devoted to making every registrant's stay at the Institute as pleasant as possible, and to making sure that his comfort and convenience are served. Recognizing that registrants in special events are persons of affairs with many special responsibilities

(Continued on page 220)



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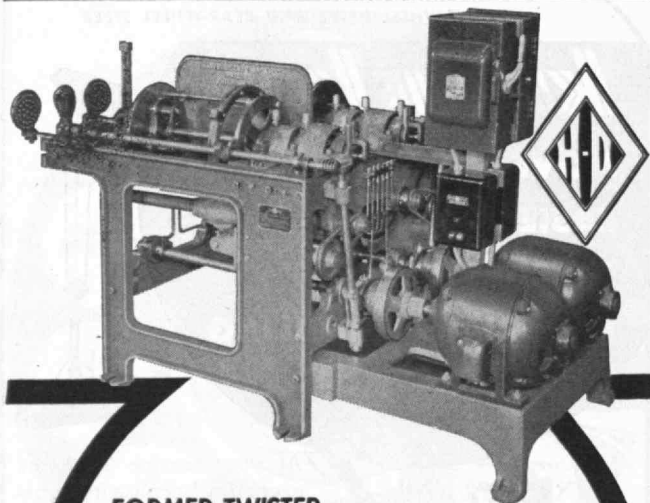
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M. I. T. SUMMER SESSION

(Continued from page 219)

ties and commitments not shared by students in regular subjects, problems of rapid location and communication arise in which special techniques and facilities of the Summer Session Office have proven their worth in winning the good will and warm appreciation of the professional public.

Although the best advertisement is well known to be the satisfied customer, it is also true that the particular components and schedule of the special events of the Summer Session change from year to year. This necessitates some kind of printed literature formulated, printed, and brought to the attention of those likely to be interested. With the assistance of the M.I.T. Office of Publications and the professors-in-charge of particular events, the Office of the Summer Session has developed a sequence of procedures which has been both fruitful and warmly received. These may be briefly portrayed as they apply to the three different aspects of the Summer Session.

General and Individual Announcements

The components of the annual series of Special Summer Programs are first publicly announced on January 1 by means of a preliminary announcement circulated to some 10,000 different individuals or companies. This announcement states what Special Programs are to be offered, when they are scheduled, what they are about, under whose direction they will be carried out, and includes a brief abstract of the nature and content of each program. This very early disclosure of schedule has proved most useful in enabling early plans to be formulated by potential registrants. Subsequently there is published during February and March a series of individual folders, each devoted to amplification of the particular subject, including details of organization, application, tuition, registration, living accommodations, recreational facilities, and so on. Inquiries regarding individual programs arising in response to the general preliminary announcement are answered by dispatch of the detailed folder. Each specialized folder is also

(Concluded on page 222)

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M.I.T. SUMMER SESSION

(Concluded from page 220)

sent to a substantial additional mailing list supplied by the professor-in-charge or his department. Total mailings of literature regarding the Special Summer Programs run about 50,000.

For practical reasons inherent in the nature of the Conferences and Symposia, the series comprising this aspect of the Summer Session cannot be completely formulated until about the first of April. General announcement of this group is therefore effected by inclusion of the list in all correspondence subsequent to its issue rather than by separate mailing.

Announcement of such regular Institute subjects as are to be scheduled for a particular summer is carried in the Summer Session Issue of the regular Institute Catalogue. In order to afford appropriate guidance to regular students planning for summer study, preprints of the summer schedule of regular subjects are made available to them prior to registration for the second term. As a matter of convenience, the Summer Session Issue of the Catalogue also carries the Special Summer Program schedule and descriptions, but such entry is primarily for cross reference purposes.

Forecast of the Future

The rejuvenated form of M.I.T. Summer Session has now been in operation for five summers. Experience over this period, particularly in the light of the massive increase of interest and registration in 1953, indicates that through its multiple aspects it is contributing significantly not merely to the convenience and academic progress of regular M.I.T. students, but also to the professional and technical advancement of hundreds of other persons who can now take advantage of the Institute's special staff, experience, and facilities. Although one of the Summer Session's chief problems perhaps may now arise out of its very success and appreciative recognition, it will endeavor to avoid the temptation to multiply its sequences of Special Programs and Conferences indefinitely, rather maintaining an appropriate balance with respect to the threefold character of its clientele, the timeliness, professional distribution and variety of its various offerings, and the effective utilization of its staff and facilities.



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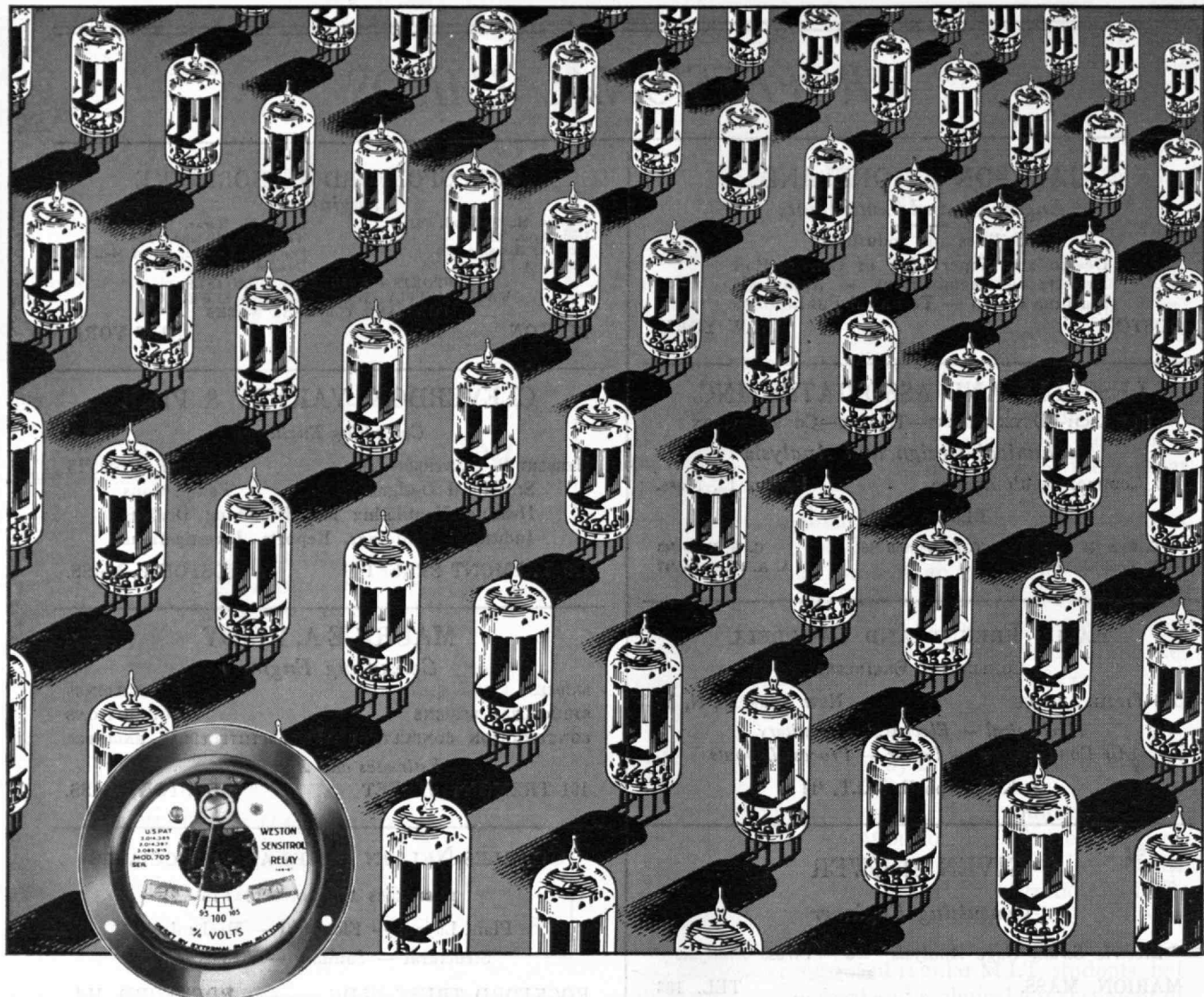
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Alumni AND Officers IN THE News

Field Goals

GEOFFREY M. ROLLASON'13, General Manager of Aluminum Company of America's die casting division in Garwood, N. J., was elected president of the American Die Casting Institution at the annual meeting of the association in Chicago in the fall.

ARTHUR F. PEASLEE'14, President of the Hartford contracting firm of A. F. Peaslee, Inc., has been elected president of the Hartford General Contractors Association.

PETER T. LAMONT'22 and HOWARD W. PAGE'27 have recently been elected directors of the Standard Oil Company (New Jersey).

DAVID J. SULLIVAN'24 has been appointed sales manager for all Du Pont plants in the United States according to an announcement made in mid-November.

CHARLES D. CORYELL, Professor of Chemistry, left Boston on December 1 for a sabbatical trip from M.I.T. to take up a visiting professorship as Louis Lipsky Fellow at the Weizmann Institute of Science, in Rehovot, Israel.

Honorable Mention

CARL J. TRAUERMAN'07 was awarded an Honorary Life Membership by the Northwest Mining Association at its 59th annual convention held in Spokane, Wash., on December 4 and 5, 1953. Mr. Trauerman received the award "in recognition of services rendered to the mineral industry."

RALPH D. BOOTH'20, Senior Partner at Jackson and Moreland, Engineers, Boston, has been made a fellow in the American Institute of Electrical Engineers "for contributions as to the successful solution of problems arising in the development of electric power systems, and in the application of electric power to industry."

ARCHIE P. COCHRAN'20 was recently named Louisville's Man of the Year by the Advertising Club of Louisville, Ky. Mr. Cochran was cited for "the many outstanding contributions he has made to the community's civic and business progress."

ERIC F. HODGINS'22, noted author and member of the board of editors of *FORTUNE*, and Nathan S. Haseltine, science editor of the *Washington Post*, were named the nation's top science writers for 1953 at the annual meeting of the American Association for the Advancement of Science on December 17. The

AAAS-George Washington Science Writing Award of \$1,000 was awarded to Mr. Hodgins for his magazine article, "Power from the Sun."

JOHN P. O'MEARA'48 and WILLIAM L. ROLLWITZ'51 were the recipients of the first annual Judson F. Swearingen Award for outstanding scientific research work at Southwest Research Institute. The two men were cited for their "pioneer work in nuclear resonance at low magnetic field strengths."

Round Table Science

The Winter General Meeting of the American Institute of Electrical Engineers, held during the week of January 22 at the Hotels Statler and McAlpin in New York City, featured the largest technical program in the history of the Institute. The following Alumni presented papers at the conferences: PHILIP L. ALGER'15, PETER L. BELLASCHI'26, JOHN B. CHATTEN'50, WILLIAM E. COLEMAN'34, AUSTIN G. COOLEY'24, JOSEPH K. DILLARD, JR.'50, JOHN F. H. DOUGLAS'05, ARNOLD C. FIELDS'42, DONALD C. HARKER'24, GEORGE B. HOADLEY'32, ALFRED E. KILGOUR'38, YU H. KU'25, FREDERIC A. LANE'18, EZEKIEL F. LOSCO'39, KENNETH N. MATHES'35, GEORGE A. MORTON'26, WILFORD R. ONEY'48, SANDFORD C. PEEK, JR.'42, WESLEY W. PENDLETON'40, RICHARD H. PANTELL'49, WILLIAM J. RUDGE, JR.'27, RICHARD F. SHEA'24, HAROLD F. SMIDDY'20, SAMUEL D. SUMMERS'26, and JOSEPH WYLEN'50.

M.I.T. staff members who participated in the program were the following: H. ELMORE BLANTON'49, EUGENE W. BOEHNE'28, DAVID R. BROWN'47, DUDLEY A. BUCK, SAMUEL H. CALDWELL'25, GERHARD L. HOLLANDER, NORMAN MENYUK, and FAZ-LOLLAH M. REZA.

The 120th meeting of the American Association for the Advancement of Science was held in Boston, December 26-31, and the following Alumni were active participants: JOSEPH W. BARKER'16, LOUIS BERKOFKY'52, HENRY B. BIGELOW'00, ROLAND J. BOUCHER'39, LOUIS W. CURRIER'14, DAVIS R. DEWEY'41, MARTIN W. EISSGMANN'47, WALLACE E. FRANK'42, JOHN L. FULLER'35, GEORGE P. FULTON'51, OSMUND T. FUNDINGSLAND'50, W. LAWRENCE GATES'50, HOWARD L. GREEN'45, PHILIP E. GUSTAFSON'43, HUDSON HOAGLAND'24, LUDWIG KATZ'49, ARTHUR J. MCBAY, 9-46, WALTER C. MCCARTHY'43, ROGER MILKMAN'51, ALEX NAZAREK'53, KENNETH NELSON, 2-44, SAMUEL PENN'43, CHARLES H. PIERCE'32, THORNDIKE SAVILLE'17, EDWARD H. SMITH'13, EARL P. STEVENSON'19, FRANK STRATTON'29, JAMES B. THOMPSON, JR.'50, BERNARD VONNEGUT'36, and JOHN P. WEBBER'41.

M.I.T. was represented at the meeting by the following staff members: RICHARD

S. BEAR, ROLAND F. BEERS'28, EUGENE W. BOEHNE'28, RICHARD H. BOLT, GORDON L. BROWNELL'50, SAMUEL H. CALDWELL'25, KARL T. COMPTON, ANTOINE M. GAUDIN, SAMUEL A. GOLDBLITH'40, CECIL E. HALL'48, DR. HARRIET L. HARDY, ROBERT S. HARRIS'28, GEORGE R. HARRISON, HENRY G. HOUGHTON'27, JOHN T. HOWARD'25, HENRY B. KANE'24, SAMUEL LEVIN'48, WARREN K. LEWIS'05, KURT S. LION, WILLIAM T. MARTIN, FREDERICK K. MORRIS, WILLIAM H. PINSON, JR.'52, BERNARD E. PROCTOR'23, ENDERS A. ROBINSON'50, WALTER A. ROSENBLITH, HENRY SHERMAN, 6-46, IRWIN W. SIZER, VICTOR P. STARR'38, HERBERT H. UHLIG'32, RAYMOND WEXLER'39, and JEROME B. WIESNER.

Obituary

CHARLES E. HOLMES'86, May 5.
MAURICE B. BISCOE'93, December 29.
JESSE H. BOURNE'95, November 18.*
GEORGE R. WINSLOW'95, December 6.
WILLIAM T. DORRANCE'96, April.
RALPH E. WILDER'98, October 28.
GEORGE E. RUSSELL'00, December 11.*
LEO W. STANDISH'00, August 10.*
L. WEBSTER WICKES'00, September 16.*
WALTER P. R. PEMBER'02, December 12.
EARL P. PITTS'02, May 22.
WALTER G. BENT'05, October 23.*
HOWARD H. BROWN'06, date unknown.
DEWITT C. RUFF'07, September 1, 1952.
NORMAN C. NICOL'08, November 13.
LELAND CLAPPER'09, November 19.*
HARRY V. KENERSON'09, October 29.*
EDWARD B. GOLDENBERG'10, July 25.
G. HOWARD ALLEN'10, April.*
GEORGE E. MIERS'10, September 24.*
EDWARD STUART'10, November 20.*
BEARDSLEY LAWRENCE'11, December 13.
WALTER P. WELCH'11, December 17.
ROBERT K. WRIGHT'13, December.*
WALTER S. HUGHES'14, December 6.
GORDON W. WHITE'14, January, 1953.*
CARL E. BUCK'15, November 21.
THEODORE STRONG'16, November 1.*
PAUL B. THOMAS'16, November 4.*
CHARLES T. ELLIS'17, October 2.
STANLEY S. ROBERTSON'17, December 1.
VIRGIL D. COLLINS'20, September 30.*
WALTER M. CUSICK'20, 1952.*
PAUL H. DUNCAN'20, August 23.*
H. DEANE GRISWOLD'21, November 26.*
KENDRICK P. COACHMAN'22, October 30.*
STEVENSON FINDLATER'23, November.*
CHARLES J. KOCH'23, November 21.*
G. NILES MILLER'23, October 15.
JOHN H. PERRY'23, December 14.
C. STANLEY ROBINSON'23, November 3.
CHARLES R. MUEHLBERG'25, July 16.*
ROBERT J. TRINKLE'26, October 17.
AMES B. HETTRICK'28, December 27.*
BORIS A. BERESTNEFF'29, September 10, 1952.*
PHILIP TORCHIO, JR.'30, August 9.*
LOUIS F. VARGAS'30, April 13, 1949.*
BESS EXTON'33, June.

*Mentioned in class notes.**

News FROM THE Clubs AND Classes

CLUB NOTES

Atlanta Alumni Association of the M.I.T.

On the afternoon of Wednesday, November 18, two distinguished members of the Institute's Staff visited Atlanta, Ga. They were Don Severance '38, Secretary of the Alumni Association, and John E. Burchard '23, Dean of the School of Humanities and Social Studies. These gentlemen were royally entertained by our Honorary Secretary, William E. Huger '22, at his charming suburban home on Valley Road. A stag party with suitable refreshments was in order, and the Alumni present were able to find out what was going on at the Institute at the present time.

The following Alumni were present: Boris W. Boguslavsky '38, William B. Erb '51, Henry D. Furniss, Jr., '36, Maurice A. Garr, Jr., '49, William E. Huger '22, H. E. Lobdell '17, Clarence B. Rogers '14, Bruce E. Sherrill '28, L. H. Turner '99, and John J. Waferling '35.

Dean Burchard is a recognized authority on library construction and operation, and he came here for the dedication of the new Price Gilbert Library at the Georgia Institute of Technology in Atlanta and for the new Ila Dunlap Little Memorial Library at the University of Georgia at Athens. Included in the dedication exercises at Georgia Tech, Dean Burchard made an appeal to their leaders to keep the standards highest so that "your sons" will be behind none in the nation. He also called for a broader training that will give the engineers spiritual as well as technical knowledge of today's problems. — LAWRIE H. TURNER '99, *Secretary*, 625 Sherwood Road, N.E., Atlanta, Ga.

M.I.T. Club of Central Massachusetts

The Club's November meeting was held at the Worcester Pressed Steel Company in Worcester. After a very pleasant dinner in the company's cafeteria and a short business meeting, club members and wives were escorted on tours through the company's plant and museum. Although the tour of the plant was very interesting, that portion of the evening spent in the museum was probably most fascinating to the group at large. The curator of the museum, Mr. Joseph Gagne, acted as guide and commented ably upon the extensive exhibits of metalcraft; these works of art were representative examples of man's craftsmanship from his earliest recorded history to the present day. Prominent in the display were complete sets of armor of various periods. The architecture of the museum was a thing of beauty in itself, in perfect harmony with its contents.

Three more meetings have been scheduled. The first will be held at the Shera-

ton Hotel in Worcester on January 25. Professor C. Stark Draper '26 of the M.I.T. Aeronautical Engineering Department will speak about the most recent developments in his field. The second meeting will be held in the same place on March 22. At this meeting Professor Arnold Tustin, a British educator on a year's leave from Oxford, will talk to us about technological education in America and in Britain. Finally, for our annual ladies' night, May 7, at Sterling Inn, Herbert Goodwin '37, Assistant Professor of Production Management at M.I.T., will speak on work simplification at home and in the plant. — JAMES E. HAGGETT, *Assistant Secretary*, Norton Company, New Bond Street, Worcester, Mass.

M.I.T. Association of Cleveland

The first meeting of the 1953-1954 season of the Association was a dinner meeting held on Thursday, November 19, at the Hotel Carter. About 40 members were present. President Howard P. Ferguson '27 announced that the Executive Committee had nominated G. Richard Young '37, as a candidate from District 7 for membership on the National Nominating Committee of the M.I.T. Alumni Association.

The program featured two emissaries from the Institute on separate tours through the hinterlands carrying the M.I.T. message to the faithful. It was our good fortune that their paths crossed in Cleveland at the right time. Hamilton Herman '43, Special Assistant to President Killian '26, brought us up to date on the expansion of M.I.T. plant and facilities resulting from the Development Fund and the major needs yet to be met, and outlined some of the current plans for meeting those needs. W. Van Alan Clark, Jr., '42, Associate Professor of Industrial Management, discussed the new School of Industrial Management, and provided a very interesting report on its formation, organization, progress and aims.

The next meeting is the Annual Student Meeting at the Hollenden Hotel on December 29, to which all present M.I.T. students from the Cleveland area have been invited. This event has become an outstanding feature of each year's program, and a large attendance at this year's luncheon is expected. — WILLIAM M. FOLBERTH, JR., '41, *Secretary*, 1107 Forest Drive, Lakewood 7, Ohio. HERBERT J. HANSELL, 2-46, *Assistant Secretary*, 1759 Union Commerce Building, Cleveland 14, Ohio.

Detroit M.I.T. Association

The Ford Motor Company was host to the Association on Monday evening, November 30, 1953, for a dinner and a trip through the Ford Research and Engineering Center. A film, *Techniques for Tomorrow*, was shown preceding the dinner and covered the story of "automation" and operations at Ford's new Cleveland Engine

Plant and Foundry. After dinner, Mr. E. S. MacPherson, Vice-president of Engineering at Ford, welcomed the 115 members and introduced the film, *Tomorrow Meets Today*, which was the story of operations at the Ford Research and Engineering Center. The trip was arranged by Morgan Collins, Jr., '27, Comptroller, and Henry Johnson, Controller, Engineering Staff of Ford Motor Company, both of whom are officers of the Detroit Club. — EVERETT V. MARTIN '24, *Secretary*, 22633 Law Avenue, Dearborn, Mich.

M.I.T. Club of Hartford

The Club held its first meeting of the 1953-1954 season at the Hedges, New Britain, on November 18. Forty-four members were present to enjoy listening to Dean E. P. Brooks '17 of the School of Industrial Management give the first of what will be a series of four talks on the subject, "Preparations for Engineering Leadership." This is the first time that our Club has attempted to co-ordinate the subject matter of our meetings, and the response on the basis of this introduction assures us of a successful series.

We were extremely happy to welcome Professor Mason Smith as a guest at our first meeting; he continued the above-mentioned subject at our second meeting which was held on January 20. All local and visiting Alumni from M.I.T. are most welcome to all of our activities. — CHARLES P. BRITTON '33, *Secretary*, 15 Lewis Street, Hartford, Conn.

Indiana Association of the M.I.T.

The November meeting of the Indiana Association was another dinner meeting, this time at the Athenaeum Turners Club of Indianapolis. We always seem to go back there where the food is so good. After dinner, Mr. Wilson of the Industrial Equipment Company of Indianapolis showed us a sound movie called *Man With a Thousand Hands*. It is the story of the part played by International Harvester machinery in the tremendous Aluminum Company of Canada project which is the largest privately financed undertaking of its kind in the world. It is a wonderful movie. — THOMAS C. DORSTE '47, *Secretary-Treasurer*, 1210 East 71st Street, Indianapolis, Ind.

M.I.T. Association of Japan

Japan's first great world scientific meeting has become a reality with the International Conference on Theoretical Physics which held its opening ceremonies at Tokyo University on September 16, 1953. After Nikko, Hakone and Atami trips, ancient Kyoto was selected as the location for the main session to discuss and debate the newest fields of science by some of the best scientific minds of the century. Fifty-four guest physicists from

14 countries and nearly 650 Japanese physicists and advanced students led by Dr. Hideki Yukawa, Professor of Kyoto University and Nobel Prize winner for discovery of the meson, one of the baffling and mysterious particles that make up the atom's nucleus, took part in the Conference from September 18 to September 23 at Kyoto University.

John C. Slater, Professor of Physics at M.I.T., and Vice-president of International Union of Pure and Applied Physics, arrived in Tokyo on September 8 to participate in the Physics Conference. Professor Masao Kotani of Tokyo University, Professor John K. Minami³¹, and I greeted Professor Slater on his arrival at Haneda Airport. On the following day, September 9, at 5:00 P.M., the Association held a special meeting in honor of Professor Slater at the conference room of Mitsui Main Building. The following attended the meeting: Major W. G. Kussmaul, Jr.⁴¹, Lieutenant Colonel R. I. Ulans³⁶, H. Royce Greatwood²⁵, Ralph E. Rubins²³, Z. T. Wong¹⁸, George Yamashiro⁴², Chojiro Amano²⁸, Tatsuo Furuichi¹⁴, Taizo Hayashi⁵⁰ (F.S.S.P.), Yutaka Hara³³, Taichiro Hori³², Keizo Horiuchi²³, Shikao Ikehara²⁸, Masaru Kametani²⁵, Juntaro Kawai²¹, Kikuo Kotoda⁵² (F.S.S.P.), Seiichiro Kuroki (guest), John K. Minami³¹, Kiichi Murakami²⁹, Akira Nomoto, Yutaka Tanaka¹⁰, Shinji Togo³¹, and Hiroshi Wada (guest).

We were impressed by the fact that the new work investigated by the Conference is so high in the scientific stratosphere that it may take years or decades before even college scientific students can understand it, and we were convinced that this Conference, to the average man, is significant in that it demonstrates the value of international co-operation through the interchange of ideas and knowledge not only in the field of pure science but also in that of applied science.

It was rather unfortunate that at the meeting there were none of us who had taken the course in Professor Slater's field or an allied course with the exception of Shikao Ikehara²⁸ who received a Ph.D. in Mathematics at the Institute, and Professor Slater gave us a story on the campus of present-day M.I.T. Drinks and a delicious dinner were good enough to keep all people engaged in exchanging pleasant conversation around Professor Slater until nearly 9:00 P.M. — JOHN K. MINAMI³¹, *Secretary*, Edogawa Apartment 54, Shin-ogawamachi, Shinjuku, Japan.

M.I.T. Club of Milwaukee

Professor B. Alden Thresher²⁰, Director of Admissions at M.I.T., addressed the Club at a dinner meeting on Friday, November 20, at the Wisconsin Club. At this dinner, 13 high school principals and educational counsellors were our guests. Prior to Professor Thresher's talk, each guest and member received copies of an issue of the *Christian Science Monitor* containing an article entitled "M.I.T. Pilot Plant for Leadership."

Professor Thresher stated that the secondary school system provides a great deal of support to M.I.T., and that M.I.T. in conjunction with the Ford Foundation

has embarked on a program to improve its contacts with the secondary schools. He reminded the representatives of the local schools that M.I.T. Alumni are available in all sections of the country to give counsel to entering students. Professor Thresher then described developments in undergraduate education now going on at the Institute. An effort is being made to stimulate the interest of the students in intellectual, social, musical, and athletic activities to produce a well-rounded graduate with personal effectiveness. Professional work is being taught with strong contacts with the outside world by presenting actual situations to the student rather than artificially contrived problems from textbooks.

Members present at the meeting were Dr. L. D. Smith⁰⁶, Chester Meyer³⁶, Fred Gruner⁴¹, Art Hall²⁵, Bruno Werra³², John C. Monday⁵¹, Edwin Reed⁴⁵, Kenneth Holmes⁵¹, Harold Koch²², Charles W. Jackson⁴⁹, William R. Bohlman⁴⁹, Jack Ballard³⁵, Arnold E. Jakel²⁻⁴⁴, Richard B. Greenwalt⁵¹, Emerson J. Van Patten²⁴, George Y. Anderson, Jr.,²⁴ — CHARLES L. SOLLENBERGER, 10-44, *Secretary*, 1030 North Marshall Street, Milwaukee, Wis.

M.I.T. Club of New Mexico

The M.I.T. Alumni Association was founded in 1875 for the purpose of fostering the general well-being of the Alumni. The latest unit to join the growing aggregation of alumni clubs is the above-titled organization which provided for the well-being of a baker's dozen of Alumni and their ladies at an Albuquerque gathering on December 6, 1953.

The business portion of the meeting consisted of the adoption of a club constitution and the election of a slate of officers. Officers elected were as follows: President — William R. Perret³⁰, Albuquerque, N.M.; Vice-president — Kenneth Pike¹⁹, Santa Fe, N.M.; Executive Committee — G. William Rollosen⁴⁷, Albuquerque, N.M.; Secretary-Treasurer — Frederic C. Alexander, Jr.,³², Albuquerque, N.M.

Business accomplished, the group turned their attention to the guest of the evening, former Dean H. E. Lobdell¹⁷ and present Executive Vice-president of the Alumni Association. Lobbie termed his address an "interlude of amiable articulation," and the articulation proved to be not only amiable, but interesting and informative as well. Following this address, the group kept Lobbie answering questions about Institute affairs, even checking into such matters as the missing Cambridge trolley car and why some rooms in the dorms have holes in the walls and ceilings.

The M.I.T. Newsletter of November, 1953, stated that we had a quieter inauguration than that of the Club in Guatemala City. This is undoubtedly a fact, but at the same time gives us something to shoot for in our future gatherings. We here in New Mexico have part of the name and are geographically located in a contiguous area to our friends south of the Border. We should at least attempt to emulate their shining example. So, in the future, *spectemur agendo*.

The Secretary cannot end this report without a few words of praise for two of our members. Bill Perret sparked the entire Club from the start almost a year ago, and it was fitting that he became the Club's first president. Bill Rollosen has had the job of scribe and is only giving it up on account of his travel commitments, which will be heavy in the near future. The writer sincerely appreciates his solid work in establishing the club's books and records.

The Club warmly invites all local and visiting Alumni to sit in with us at our gatherings. Our next formal meeting will be a picnic of sorts in the spring, but in the meantime we meet for lunch the second Thursday of the month in the Coronado Club on Sandia Base. Out-of-town-ers are invited to call the Secretary at 6-4411, extension 25152, in order to make arrangements to get on the Base. — FREDERICK C. ALEXANDER, JR.,³², *Secretary-Treasurer*, 339 Washington Street, N.E., Albuquerque, N.M.

M.I.T. Club of Southern California

On December 2 we had the pleasure of hearing Myron T. Smith³⁰, Sales Manager of the General Radio Corporation in Cambridge, talk on the activities of the Alumni Council of which he is a member, in its relation to the Institute. Present were Robert Welles¹⁵, Philip K. Bates²⁴, Philip A. Herrick²⁴, William H. MacCallum²⁴, Samuel E. Lunden²¹, Robert E. Hiller³¹, Harold H. Strauss³⁸, and John B. Dingler⁴⁸, at the University Club. Plans were made for a meeting with a speaker on the use of atomic energy in industrial plants. All Alumni should be watching for the notice.

H. E. Lobdell¹⁷, Executive Vice-president of the Alumni Association, graced us with his genial presence on December 11 at a luncheon at the Jonathan Club. The only drawback was the absence of our President William H. MacCallum who was on a trip east; he had made the fine arrangements for a most pleasant occasion.

Paul Eaton²⁷, Dean of Men at Cal Tech, added to the assembly of leading Alumni welcoming Lobby. No speeches were made but Lobdell moved from group to group answering questions.

Enjoying this visit of our ever welcome national Alumni Vice-president were Robert S. Breyer¹⁰, Hiram E. Beebe¹⁰, Harold R. Crowell¹⁵, Robert Welles¹⁵, Samuel E. Lunden²¹, Barton Jones²³, Charles H. Toll, Jr.,²³, Philip K. Bates²⁴, Rockwell Hereford²⁴, Frederick W. Grantham²⁵, Paul Eaton²⁷, Anthony Thormin²⁷, Arthur B. Marlow²⁹, Robert E. Hiller³¹, Page E. Golsan, Jr.,³⁴, Harold H. Strauss³⁸, and James S. Cullison⁴¹.

In the December club-notes a report of a gift of \$100,000 to William Jewell College was mentioned. We have recently learned from William W. Eaton¹⁷ that the gift was made to the college by his cousin, Dr. Hubert Eaton, an alumnus of that institution — not in memory of his father as stated in the December club notes.

By the time this is read the annual election of officers will be completed and each

Alumnus is urged to send in the usual dues of \$3.00. This Club has been managed very efficiently and the profit from the 1951 Directory is intact for any self-liquidating project, for example, the January, 1952, Convocation. There are still hopes that outlying groups of Alumni will form active organizations which will receive the full support of this Club. The officers wish each individual Alumnus the best of everything in a good 1954. — HIRAM E. BEEBE'10, *Review Correspondent*, 1847 North Wilcox Avenue, Hollywood 28, Calif.

CLASS NOTES

• 1892 •

The Secretary recently received from Albert Mathews, who is still residing at Woods Hole, Mass., since his retirement from active work, a clipping from the *New York Times* regarding Fred Meserve, who many of us will remember as president of our Class in its junior year.

"Frederick Hill Meserve, noted collector and authority on photography of the Civil War era, will be honored on his 88th birthday by the Civil War Round Table of New York at a meeting on Sunday at the New York Historical Society, 170 Central Park West."

The Secretary has had no direct notice of the event but knows that his classmates will join him in hearty congratulations to Fred for the honor conferred upon him. News of the Class is scarce but the members around Boston are going on with their usual schedules for the winter. — CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

• 1894 •

The Secretary has recently received from Jim Kimberly (416 East Wisconsin Avenue, Neenah, Wis.) a beautifully printed copy of the Kimberly-Clark house organ *Cooperation*. It bears on the front cover an excellent colored portrait of Jim's elder son, John R. Kimberly, more intimately known as Jack, who has recently been elected president of the great Kimberly-Clark Corporation with its many activities in Wisconsin, and subsidiary plants in Memphis and Niagara Falls as well. Our Jim has been for many years an important factor in the development of this great company, and our Class feels a vicarious pride in its growth and prosperity. As Jack was a member of the Class of '28 while at Tech, this especially interesting periodical is being sent on to the Secretary of his Class, who will doubtless wish to make some reference to this matter in his class notes, now or later.

News of two long-lost members of the Class has been recently received. George L. Mower, long with the General Electric Company at Pittsfield, and living at Amherst, N.H., after his retirement, sends in a new address, Box 5083, Gulfport, Fla. He did not state whether this is a permanent address or merely a winter sojourn. Although George has not been seen at any class functions for 10, these many

years, he is no doubt well remembered by many, especially the mechanical engineers, as a quiet and friendly young fellow who spent two or three years among us back in the early nineties. The Secretary knew him as a section mate in freshman year and a compatriot in military drill. A second classmate of the early years who has recently been heard from is Jesse M. Holder. For many years he has been in the coal business in Lynn, and now gives his residence as 42 Walker Road, Swampscott. It is hoped that he can be induced to be with us in June when we plan to hold a reunion celebrating our 60th anniversary of graduation. Our Class had many who did not stay through the four years, but an attempt will be made to round up as many as possible of those who were associated with the Class in the early days. Time has taken its toll, and there are only about a third of our original group now surviving according to our latest attempts at a census.

As this is written Alan Claffin is in the hospital and has recently undergone an operation, but the latest news is that he is on the mend, and we expect that he will be back in good health in time for our June reunion. Alan still carries on his business as a dealer in chemicals and has a wide acquaintance in New England industry. He is also in demand as a speaker. Recently he spoke before the Rotary Club of Biddeford, Maine, on the natural resources of that state. This is a subject on which he has much information, and he is sure that while most people think of Maine as a land of forest products, potatoes, and fishery products, they fail to remember its mineral resources. This is an aspect of the state to which Alan has given much thought. A casual acquaintance of the Secretary recently characterized Alan as a person of great versatility, wide knowledge, and breadth of vision. Some praise, but true, and deserved.

Walter Batson has recently changed his address to 220 Langley Road, Newton Center, 59. Although he has been somewhat disabled and, like the Secretary, has impaired vision, we hope that he will be on hand in June for our round-up. A Christmas card from Ned Hunt in Portland states that he is looking forward to the event, and a similar message comes from Horace Crary, our Class President. Of course no reunion would be thinkable without him and the other standbys like Abbot, Bean, Chase, Warren, Schiertz and Shurcliff (Shurtleff to us in the old days). A letter will go forth soon after the new year to every man on the list.

Your Secretary will have received another honor ere these words meet your eyes, for he is to receive the first Meritorious Award of the Forty Niners, a group associated with the National Cannery Association, and especially interested in processing, machinery and equipment. The affair will take place at Atlantic City on January 22. These things add much to the pleasure of the aging, for in these days most of the distinctions go to men in the periods of their activity. It is pleasant to know one's work of years long past is still remembered. — SAMUEL C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge 39, Mass.

• 1895 •

The light of life seems to pass on, as one by one our class ranks are thinned; yet one finds this light illuminating the golden memories of friendships made during our Tech years.

Jesse Haskell Bourne, Course II, passed away on November 18, 1953, at his home at 10 Kensington Avenue, Bradford, Mass. His passing was sudden. He was a native of Massachusetts, born in Foxboro in 1874, and graduated from the Foxboro High School in 1891. After graduation from Tech, from 1895-1897, he was instructor in the mechanical laboratory at the Institute. Following this service from 1897 to 1899, he had charge of the mechanical department at State College, Greensboro, S.C. He then went to Haverhill, Mass., where he was instructor in the High School, and director of the mechanical arts in the public schools. In 1920 he was elected assistant principal. He was a teacher beyond question, and enjoyed his life work.

Jesse had five children by his first wife, Alice Durham Eddy, who passed away on December 16, 1934. Our records indicate that one of his daughters, Dorothy, attended Smith College, and another daughter went to Simmons College. Besides his second wife, Ada Pearson Bourne, he leaves five daughters, 13 grandchildren, one great grandchild, two nieces and a sister—a wonderful family record.

Your Secretary is taking this simple way to wish all mates a happy and a comfortable New Year. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

The holiday season will have come and passed by the time these notes are received. A belated Christmas and New Year greeting to you all, and may you make a resolution to the effect that each one of you will send in at least one news item in the 1954 schedule. For the first time we have no class news to report. You will have received a printed list of the present living members of the Class with their latest addresses. It had occurred to your Secretaries that such a reference sheet would be valuable for a check-up on the present class membership.

Change of address: Charles E. Stamp, P.O. Box 17, Rancho Santa Fe, Calif.; Clarence C. Culver, care of W. P. Lindsey, 651 West Wisconsin Avenue, De Land, Fla.

Our financial standing as of December 1 is: benevolent fund, \$1,683.27; general fund, \$104.50 — JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge 38, Mass. FREDERICK W. DAMON, *Assistant Secretary*, Commander Hotel, Cambridge, Mass.

• 1898 •

Fortune and bright June skies smiled on the Class for the third and final day of the 55th reunion. On this rare June 17, a day which fully measured up to the poet's rhapsody, members and guests motored to Brookline; and soon, almost unexpectedly, the wide demesne of the Country Club appeared, with its broad

green acres — golf fairways and marvelous greens — and magnificent trees and spacious buildings and porches. Here the Class was the guest of George Cottle and Elsie Treat; and what a day!

The general features of the day have been well covered by Lester and Dan in Class Letter No. 12, August, 1953; but as others like to read about the doings of the Class, and classmates may enjoy a recapitulation with a few added details, here goes.

There was no set program for the day. In fact, there was so much to talk about from the previous days, that almost automatically members and guests split into congenial groups on the wide piazzas of the Country Club, or strolled about and sat on the lawns to converse and visit. Consult the list of members and guests, as given on pages x-xi of the November issue of *The Review*, and the write-up of the day at Babson Park, as given in the December issue of *The Review*, and then give your imagination free rein and just enjoy that concentrated talk-fest. Upstairs Lester and George and Dan had prepared a special exhibit, pertaining to '98, covering undergraduate and alumni years. There were pictures of track teams and of early reunion groups; *Techniques* and a considerable assortment of pictures and booklets; all of which greatly interested members of the Class.

The marvelous sports facilities of the Country Club were available to members and guests; but if any broke off conversation to try sports, this scribe and others were not aware of them. Why try mere sports, when the time was all too short to continue delightful conversation?

In no time, lunch was announced; and here again, George Cottle had prepared two typical surprises. The lunch was held in an upstairs dining room. Adjoining this room was a smaller one for the apéritif hour. On the side of this room, facing us, as we entered the room were the letters, M.I.T., in solid ice. We estimate that the letters must have been 15 inches high. In the adjoining room, similarly in letters of ice, were the class numerals, 1898! A very pleasing and striking surprise. The other thoughtful surprise, especially pleasing to the teetotalers and those, alas, now forced to cut out alcoholic drinks, was the inclusion among the beverages of a non-alcoholic, white, sparkling grape juice.

Lunch was served and was up to the high standard of the 50th anniversary; and the happy talk-fest continued. After lunch, Lester arose and presided over a semiformal half-hour with his usual grace and charm. We were fortunate to have with us as guests, Dr. and Mrs. Compton and Dr. and Mrs. Hinckley. President Killian '26 wrote to Lester, regretting that he could not be with us, because of a previous appointment to visit his mother in North Carolina. Lester, in a brief and happy prologue, presented Miss Frances Curtiss, who attended our graduation and Class Day in 1898; spoke highly of the faithful work of our former Secretary, Arthur Blanchard; and praised and humorously evaluated the work of the present incumbent. He then mentioned various members of the Class who were prevented from attendance by illness; and it was voted that a note be sent to them

extending our greetings and best wishes. Dr. Hinckley spoke of the pleasure it gave him and his wife to represent Mr. and Mrs. Babson and to be included in so many of the '98 gatherings. Dean Harrison described how he became an honorary member of the Class and his pleasure at the honor. Dr. Compton, cognizant of the fact that some at the luncheon had not seen M.I.T. for 55 years, described changes at our Alma Mater, and especially delineated the difficulties and problems inherent in operating the Institute through quickly shifting world situations; anon peace, hot war, cold war, et al. Lester then called on Dr. Tallant, who had prepared a humorous skit for the occasion, but who, sensing the intimate and somewhat seriousness of the moment, quickly changed to the recital, very impressively, of a so-called Irish Blessing. This we include for the sake of a permanent record.

"An Irish Blessing — May the blessing of Light be on you — Light without and Light within. May the blessed sunlight shine on you and warm your heart till it glows like a great peat fire, so that a stranger may come and warm himself — and also a friend. And may the Light shine out of the two eyes of you, like a candle set in two windows of a house, bidding the wanderer to come in out of the storm. And may the blessing of the Rain be on you, the soft, sweet Rain. And may it fall upon your spirit, so that all the little flowers may spring up, and shed their sweetness on the air. And may the blessing of the Great Rains be on you, may they beat upon your spirit, and wash it fair and clean, and leave there many a shining pool, where the blue of heaven shines reflected — and sometime a star. And may the blessing of the Earth be on you, the great round Earth. May you ever have a kindly greeting for them you pass as you're going along the roads. May the Earth be soft under you, when you lie out upon it at the end of a day, tired; and may it rest easy over you, when at the last you lie out under it; may it rest so lightly over you that your soul may be quickly through it, and up, and off, and on its way to God . . . Cornelia Rogers."

After lunch, a business meeting of the Class was held. This was a hurried affair, as classmates were anxious to get back to their guests. Dan called the meeting to order, and as nearly as we can make out from our notes, there emerged from it all two presidents, Lester and Dan; so that now like Sparta of old, '98 has two kings. (Unlike the duality at Sparta, we know that our two presidents will both be on the job all the time.) Also various votes of thanks were passed: commending the work of the Chairman, the President, the Secretary and various others who had labored in behalf of the Class. Especially the Secretary was instructed to write notes, extending the great appreciation of the Class to Mr. and Mrs. Babson and to George Cottle and to Mrs. Elsie (George) Treat. You know how it is, when in a merry moment, you try to do a half-hour's deliberation in about two and a half minutes. However, we believe the above is accurate.

To state that the day was enjoyed by all is a truism. This apparently applied

to our youngest member, Master Richard McKown, aged six, grandson of Agnes and Elliott Barker. We were wondering how he could be entertained. Needless, as he brought his own entertainment. We saw him running across the piazza or anon across the lawn, manifestly very happy. This outstanding deportment speaks volumes of the fine training by his mother, Mrs. Miriam Barker McKown, who also attended the reunion.

After the business meeting, taking of pictures seemed to be the order of the afternoon. In groups, small and large, many pictures were snapped. Those we have received have been of a high order; and these pictures will abide as a constant reminder of a very happy day.

So much for the third and final day at the 55th. We heard much talk of a 60th. And now we must include in the notes a choice bit before it is too late. Our classmate, Fred Gilbert, sent to Lester last June from far California (page Howard Bodwell) the following interesting clipping:

"Hemet Firm's Rose Wins All-American. Hemet, May 23 — The Howard Rose Co. of Hemet, one of the nation's major independent wholesale rose growers, hit the jackpot with its first entry for 1954 All-American rose honors. This coveted award has been given to a sparkling pink floribunda named 'Lilibet,' it was announced today by All-American Rose Selections, Inc., and by Paul Howard, president of the Howard Rose Co. The flower was given British Queen Elizabeth's nickname, a tribute to her on this Coronation year. 'Lilibet' grew from a seed harvested from the Company's first crop of roses cross-pollinated in experiments by company vice-president Robert Lindquist, who heads the rose research department. 'Lilibet' is the only floribunda to win All-American designation this year. Lindquist, an Army training pilot in World War II, started planning for rose research in 1945 and in 1947 made the first crosses — out of which came the prize rose. The flower was entered into All-American trials in 1951 and was subjected to tests by the All-America organization, which has 22 test gardens, before final selections were made. 'Lilibet' won out over roses submitted not only from throughout the United States but also from rose fanciers over the world. The Howard Rose Co. grows some 200 varieties on its 1,000-acre ranch here."

Thanks, Fred, for this item of general interest and of very special interest to the '98 amateur growers of roses. And, by the way, the address of Fred C. Gilbert given in the January Review list was incorrect. The correct address is 1375 East Mayberry Avenue, Hemet, Calif. Forgive the mistake, Fred, and thanks again. — EDWARD S. CHAPIN, *Secretary*, 463 Commercial Street, Boston 13, Mass. ELLIOTT R. BARKER, *Assistant Secretary*, 20 Lombard Road, Arlington, Mass.

• 1899 •

In a letter recently received from George E. Lynch of Los Angeles, a life history of a deceased classmate is given: "In the November number of *The Technology Review*, I noted a reference to the death of a classmate named Juan Gail-

lard, of Santiago de Cuba. Actually, his name was Juan Domingo Real y Gaillard, since the Spanish custom of including the names of both parents is customary in Barcelona, where he was graduated from the Colegio de Carreras, shortly before he came to Boston to enter M.I.T. in the Class of '99, Course I.

"He was born in Montevideo in Uruguay, and his family moved from there to Santiago de Cuba, where his Uncle Emilio (now dead) owned the Bacardi Company whose products you have, no doubt, enjoyed at times. Don Juan did a great deal of important civil engineering work in Cuba, and his name was, and is, well known throughout the island. According to Cuban custom, he dropped the use of the second name, Gaillard, and used only his family name of Real.

"I saw him last in Santiago some years ago, when I was doing some work for the Freeport Sulphur Company in their manganese mines at El Cristo, and the nickel plant at Nicaro just across the island on Nipe Bay. I drove down from El Cristo to Siboney, where he was at his summer cottage, and we talked for two hours without a pause, while the rest of the party went bathing. When I took the plane over to Antilla, he came up from Siboney to the airport to see me off and to say 'Vete con Dios,' which good wish I certainly needed in the mess which I found at Nicaro."

From George E. Lynch's letterhead we note that he is a consulting mechanical engineer specializing in "air pollution, dust control, and gas cleaning." George is located at 210 North Norton Avenue, Los Angeles 4, Calif. I suspect that Los Angeles can stand a lot of this kind of work.

By the time these notes are read, I hope each of you will have received and read a letter from the 55th Reunion Committee telling you of the plans made so far for our 55th reunion next June. A number of questions are asked. If you have not already replied, please do so without further delay. Your Committee needs your ideas. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany 10, N. Y. MILES S. RICHMOND, *Assistant Secretary*, 201 Devonshire Street, Boston 10, Mass.

• 1900 •

George Edmund Russell, one of the best known members of our Class, died on December 11, 1953. Although he had been ill for many months, the end came suddenly and unexpectedly caused by a heart ailment. George was born in Boston on December 25, 1877. He lived in Woburn while a student at M.I.T. He took an active part in class affairs being captain of Company A of our freshman battalion, captain of the Rifle Team, member of the Hare and Hounds Club and director of the Senior Class. He was class secretary from 1900 to 1905 and from 1924 to 1928. Upon graduation in 1900 he was, for a year, an assistant instructor of civil engineering at the Institute. From 1902 to 1905 he was with the American Car and Foundry Company. Here he worked on the development of the all-steel freight car and the design of the first non-combustible steel passenger car for use in subways. In 1905 he returned to the Civil

Engineering Department of M.I.T. where he remained until his retirement in 1943; he then became emeritus professor but continued to assist in the Hydraulics Laboratory and in other Institute work until his illness in 1951. He specialized in hydraulics and became professor of hydraulics in 1921. In 1909 he published a textbook on hydraulics which ran to five editions and was widely used in technical schools and colleges.

In addition to his work at the Institute, George did a great deal of outside consulting work. He was designing engineer for the Charles River Basin Commission in 1906; employed by the Transit Commission to make a vehicular traffic study in Boston, 1907-1908; made a survey of passenger traffic in the Metropolitan District, 1908-1909; was civil service examiner in civil engineering for the state, 1912-1925; and has served various municipalities as advisor on water supply. He served for many years as a member of the Advisory Committee of the U.S. Coast Guard Academy in New London, and cooperated with the U.S. Navy Department in design of a new type of submarine during World War I.

Living in Arlington and Lexington, he was active in local affairs. He was a member of the Arlington School Committee, chairman of the Lexington Board of Health, a former deacon of the Hancock Congregational Church, and a past president of the Hancock Men's Club of Lexington. He was a fellow of the American Academy of Arts and Sciences and a member of the American Society of Civil Engineers and the Boston Society of Civil Engineers. George married Mary E. Emerson in 1901. They had two sons, Edmund E. Russell (M.I.T.'24) of Providence and Richard E. Russell (M.I.T.'42) of Waterbury, Conn. He was married again, in 1933, to Jean K. Parker, who survives him as does also a sister who is wife of our classmate, Clinton D. Thurber of Meredith, N.H.

We have, by the way, received a couple of letters from Clinton Thurber regarding Fred Southworth who was apparently one of his buddies. Clinton, who was retired from the Civil Engineer Corps of the U.S. Navy as captain over 20 years ago, seems to be living the life of Riley up in Meredith, N.H.

We have learned, indirectly, that Harry Grant and his wife sailed on December 10 for a long cruise about the Mediterranean. About the time that this is written (December 20) the couple is in Malaga, Spain. From there they expect to visit various places in southern Spain and Morocco. Later, in the springtime they will go on across southern France, through the French and Italian Riviéras to Florence and Venice and then into Switzerland. They will return home along towards June. After his retirement last May, Harry sold his home in Washington and moved to Jerico, Vt., where they apparently have a farm which is the summer haven for the entire family, children and grandchildren.

We have received word of the deaths of L. Webster Wickes, Course X, and Leo W. Standish, Course III, both of whom were with us for a short time in our freshman and sophomore years. — ELBERT G.

ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

• 1902 •

J. R. Marvin writes: "Ever since I received Dan's letter last April I have been intending to write to you. Then two or three months ago when I read the one from Farley Gannett that was published in *The Review* I made another promise to myself to write 'soon.' Now the one in the November issue by Frank Robbins gives me another spur. I see Farley occasionally and also used to see Frank once in a while at the Bethlehem Steel office in Steelton before he retired.

"Like Gannett I am one of the few of the Class not yet retired—I have too much fun in my business to retire so long as my health, which is still excellent, will permit me to get around and see my friends and customers. All my business life has been spent in engineering sales with the exception of the first couple of years after graduation, which were spent in the draughting room of B. F. Sturtevant. I did a little selling while with Sturtevant and then was with Holtzer-Cabot as salesman for a few years. Then I was sales office manager with Diehl Manufacturing Company (Electrical Division of Singer Manufacturing Company) first in Boston, then Chicago and later in Philadelphia.

"Fifteen years ago I started my own business as a manufacturers' representative handling a few electrical and mechanical specialties. Three years ago I gave up all the lines except one, and gave all my time to selling the product of J. L. Gleason Company, Inc. of Cambridge, Mass., who made automatic retrieving reels for electric cable and hydraulic hose (to supply power to equipment in motion). While at our 50th reunion I was notified of a strike at the Gleason factory. It lasted six months during which time my job was to try to hold our customers. But it ended and the Gleason Reel Corporation which took over is going stronger than ever.

"In December, 1911, I married Grace Field of Denver. We have two daughters, both married, and five grandchildren. One daughter lives about 20 miles from us so we see her and her family often. The other now lives in Colorado. . . .

"Mrs. Marvin and I are both fond of traveling and during the past eight years have seen much of the country from the Gaspé to Southern California and from Alaska to Florida. We hope to take another three months' trip in '54. Dallying with a trip to Europe especially since reading Farley Gannett's letter and remembering Bill Kellogg's pictures which he gave at our 50th. I am planning to see Farley soon and learn more of his point of view and experience of travel abroad. I particularly want to see Spain and again visit England, Switzerland, and Italy, where I spent the summer with Hal Fletcher just after we graduated."

Those of our Class in Florida will please note that Grant Taylor is wintering at Clearwater at 604 Bay Avenue. Charles Porter is now at the Carolina Inn, Chapel Hill, N.C. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

We are sorry to have to report that I. F. Atwood's wife passed away on November 22, 1953, at her home in Topsfield, Mass. She was the former Clara Greenleaf, daughter of the late Captain William H., and Margaret Greenleaf. She had been ill for many months, and had spent much of her late life in Florida. She was noted for her work in charitable and philanthropic organizations. A Solemn High Mass of requiem was celebrated in St. Rose's Church in Topsfield. She left her husband, a daughter, a brother and two sisters. Although she had not been able to attend any class gatherings on account of her health, I.F. has been a loyal supporter of class affairs, and the rest of the Class extend its sympathy to him in his loss.

Since the summer, Carlton Green has agreed to take over the post of Class Agent for the Alumni Fund, and you will be hearing from him in that capacity occasionally. After his retirement as Dean of Engineering at Purdue, Potter has been devoting his time to the coal industry's research agency, which he has headed for the past three years. In the June-August, 1953, issue of *Bituminous Coal Research* there is a fine portrait of Potter and a page write-up of his life and experience, which is too long to quote in full, but says in part, "During the three years that Dr. Potter has served the coal industry as president of B.C.R. on a part-time basis, his broad experience in research and engineering has been of great value . . . [he] has brought to the coal industry an exceptional background of research and engineering administration, and wide acquaintance with management, in fields related to coal . . . in the field of education and government service, Dr. Potter's work in setting up emergency engineering training during the pre-war and wartime period is especially noteworthy. . . . Throughout his engineering and educational career, he has been a member of, and closely associated with, practically all of the major organizations in the engineering field. Included among the honors he has held: president of the American Society of Mechanical Engineers; president of the Society for Promotion of Engineering Education; vice-president and acting president of the Association of Land-Grant Colleges and Universities; trustee of the Engineering Foundation, and member of the Board of the National Science Foundation." He had to leave our 50th reunion last June, because Northwestern wanted him in Chicago to receive another honorary degree. He is undoubtedly one of the leaders in engineering education and research in this country, and we are proud that he is a member of the Class of 1903. We wish him a long and satisfying life in his present occupation.

Changes of address have been received as follows: G. H. Gleason to 152 Hillcrest Road, Summit, N.J.; Hewitt Crosby to 2531 Milman Drive, Sarasota, Fla. (after having spent the past six months in California); W. L. Wing, to 1090 Beacon Street, Brookline, Mass.; L. L. Thwing to 7 Moraine Street, Waverly, Mass. We expect the group in Florida will get together

in February for their usual reunion, and are hoping that the group in Southern California will do the same some time this winter. — FREDERICK A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1904 •

Your substitute Secretaries are back on the job after turning the January issue of class notes over to the official Secretary. We are sure you enjoyed Steve's contribution.

These notes are being written just before Christmas but you won't be reading them until February. We hope Santa Claus didn't neglect you and that your gifts included plenty of vitamins to pep you up for the June reunion, and that those athletically inclined received bottles of liniment.

In a few weeks you will receive a general class letter giving full details of our 50th reunion at Oyster Harbors on old Cape Cod, and there will be enclosed a reply card for definite sign-ups. The September letter produced the information that 118, including wives, hope to attend. We suggest that you stimulate these hopes and be prepared to sign on the dotted line for reservations when you receive the next letter. There will be some financial budgeting involved for many of us, but there is no substitute for a 50th reunion, so if you have not already done so, begin to make any necessary adjustments now.

Since the list was published in the December Review we have received a few replies in the "hope to come" class: Mr. and Mrs. Ralph Hayden, III; Mr. and Mrs. L. O. Hopkins, I; Mr. and Mrs. W. H. Eager, VI; George Ainsworth, IV; W. D. Estes, III.

We are sure there are others who will jump on the band wagon when it really starts to roll. You can all be sure that someone will be greatly disappointed if you are not among those present, so think of him and also yourself. Now that you have 1954 calendars on your wall you had better draw a big red circle around the dates June 11, 12, 13 and 14.

General class news is scarcer than usual if that is possible, but three items indicate that at least some of the '04 brethren are not letting advancing years get them down. For instance, the latest issue of *Technicolor News and Views* shows that Herb Kalmus is keeping in the forefront of the movie and television industry.

The distinguished figure of Cy Ferris appeared in the Boston *Herald* December 17. He was shown as president of the Pilgrim Laundry presenting a 50-year service medal to one of the employees.

And here is an item from a Bangor, Maine, paper announcing that Miss Alice M. Wetherell, Children's Librarian in the Bangor Public Library is to marry Rowland G. Rice of Zanesville, Ohio. You will recall that Rice is M.I.T. '04, Course XIII. There is no better time or place for a honeymoon than June 11-June 14 at Oyster Harbors. All recent or prospective bridegrooms take notice. — *Active Secretaries*: EUGENE H. RUSSELL, JR., 82 Devonshire Street, Boston 9, Mass.; CARLE R. HAYWARD, Room 35-304, M.I.T. Cambridge 39, Mass.

Little has happened in the way of headline news since last writing. Perhaps the correct way to put it is that your classmates, makers of headlines, have failed to report their big doings. Frank Webster dropped into headquarters (1905 headquarters) on his return from a two-months' trip through France, Italy, Greece, Syria, Trans-Jordan, Arabia, and so on, looking hale and hearty, heading for his home in Coral Gables, Fla. He reported the mustard seed business very slow. Bill Spalding seems to have "lit" again. On a Christmas greeting card, showing Bill standing in the foreground of one of the Alps last February, he gives a new address, that of his son, at 812 Ridgedale Street, Birmingham, Mich. They are apparently there for the winter — "if we can stand the cold after 10 years in Texas." By a strange coincidence, in the same mail from the Alumni Office there was a notice that Roger P. Ingalls, VI, had moved from Lexington, Mass., to 724 Brookside Drive, Birmingham, Mich.

Through a newspaper clipping we have a further story on Walter Bent, whose death was reported last month. Some of you know some of it, but in reviewing we note that Walter began his career as a chemical engineer in the Kodak Park laboratory in 1905 and rose to chairman of the board of Kodak Limited, overseas subsidiary of Eastman Kodak in 39 years. While assistant superintendent of the sensitized paper department at Kodak Park, he was promoted in 1919 to the position of assistant manager of the Harrow Works of Kodak Limited. In 1930 he was named manager of all Kodak's European business. Walter retired in 1946, purchased an estate at Old Lyme, Conn., where he died on October 23, 1953. He was a director of the American Chamber of Commerce in London, a member of the American Club and the Reformed Club in London, and a member of the Sons of the American Revolution. Besides Mrs. Bent, he left four sons and a daughter. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass.

• 1906 •

Business Week, issue of November 14, 1953, pictured on its cover a portrait of one of our classmates with the following caption: "Joseph V. Santry of Combustion Engineering: More electricity from less fuel." Inside the issue there is a three and a half column, illustrated article about Combustion Engineering, Inc., of New York City of which Joe is now chairman of the board. The Secretary regrets that space will not permit the reprint of the entire write-up in this column as he found it most interesting reading. However, we will present some of the high lights so that classmates may appreciate the contribution Joe has made to the development of modern steam power.

In 1914 when the firm got started with Santry as its Boston sales agent, Combustion Engineering was manufacturing stokers for locomotives; later C.E. shifted to furnaces and boilers, trying experiments with powdered coal, then a big innovation. After that came the high pressure boilers, and now C.E. is the second

largest and fastest growing producer of boilers for utilities. As a sideline it turns out several other products, including packaged boilers for apartments.

When the company started 40 years ago, steam was a popular but not too efficient source of power: most operating costs were low, fuel and water were cheap and little attention was paid to using these items efficiently. In the years intervening all costs have skyrocketed and some of the steam users have turned to other sources of power such as Diesel engines. Some users, especially the electric utilities, could not get away from steam and therefore created a demand for steam improvements. As a result the manufacturers, of which C.E. is one of the largest, have developed improvements which result in using steam economically.

Besides being more efficient, the developments have produced larger units which make it possible to meet the tremendous present-day ever increasing demand for electric power. Further developments in steam engineering have included the use of more efficient boilers or steam generators, as they are called today, and the use of higher steam pressures.

Fifty years ago the boiler consisted of a furnace almost separate from the boiler and heat was lost in traveling between the two. Combustion Engineering developed a boiler using the water tubes to form the wall of the furnace. Another improvement was made in the method of feeding the water into the tubes. This was called "controlled circulation," a system in which pumps and controls were used to permit each tube to carry the same amount of water; smaller tubes were also used, thus increasing the heating surface per unit of area.

The first of these boilers was used in a power station at Somerset, Mass. (near Fall River), in 1940. This boiler operated at 2,000 psi. Since then C.E. has built 40 of these boilers. The latest installation for the Public Service Electric and Gas Company, Kearny, N.J., is a boiler that operates at 2,350 psi and at a temperature of 1,100 degrees F. These pressures and temperatures are only temporary limits as present trends seem to be along the line of operation above the point where water vaporizes instantly which corresponds to a pressure of about 3,200 psi. The problem is to supply the water fast enough so that it does not completely evaporate. Combustion Engineering has recently signed a license agreement with Sulzer Bros., a Swiss company, to manufacture the Sulzer Monitube steam generating system in this country. As the name implies, this will consist of a single tube, water pumped into one end coming out as steam at the other. Other developments in boiler construction include provision for fuel flexibility, burning powdered coal, natural gas or oil separately, or all at the same time, thus being able to take advantage of market conditions and use the lowest cost fuel.

The writer concludes with the statement that Combustion Engineering has been one of the key forces that have cut fuel costs by better than half. In 1923 a power station had to burn 2.4 pounds of coal to produce 1 K.W.H. of electricity.

In 1952 it was 1.1 pounds, and now the more efficient new plants are down to around 3/4 pound.

Members of the Class who attended our 35th reunion at the Eastern Yacht Club, Marblehead, will recall that arrangements were made through Joe as a member of that organization, and that one of the outstanding events of the program was a sail along the North Shore in a sailing yacht. As noted recently in this column, Joe is still a yachtsman and owner of the schooner *Pleione*, which had the distinction of winning three races in one afternoon at last summer's regatta of the Eastern Yacht Club. The trophies won were the Puritan Cup, oldest of the Massachusetts Bay racing trophies, the Cleopatra's Barge Cup, and the Norman Cup.

The Secretary is indebted to President Coes for a copy of the notice of the annual dinner and dance of the M.I.T. Club of New York held at the Commodore Hotel on December 4. Harold attached a note to the notice advising that he and Stewart Coey represented '06 at the interesting function.

The Boston Sunday *Herald* of November 1 included an account of the wedding of Miss Carol Denise LaFrance of Holyoke to David L. Bartlett, son of Edwin B. Bartlett '06, Course VI, of Milwaukee. Miss Cynthia Bartlett of New York City was the maid of honor. Mr. S. Foster Bartlett was best man for his brother, and another brother, Mr. E. B. Bartlett, Jr., was one of the ushers. Mrs. Bartlett is a graduate of the Master's School, Dobbs Ferry, N.Y., and attended Smith College. She is a provisional member of the Junior League. Her husband graduated from Hill School, the University of Wisconsin, and studied at the University of Geneva, the University of Florence, and Columbia University. He is with Duffy and Associates, Inc. Mr. and Mrs. Bartlett will reside in Milwaukee.

We have had occasion previously to refer to the travels of the Chester Hoefer. Sunday evening, December 6, the Secretary attended a talk at the Women's City Club, Boston, given by Mrs. Hoefer; her subject, entitled "Soldiers in the Streets," covered their recent visit to Austria. The most interesting talk was illustrated by many beautiful Kodachrome slides projected by Chester. The Secretary notified the two travelers that they may be called on to give a similar performance at the next class get-together.

These notes are being compiled on December 14, in the midst of the Christmas preparations. Mrs. Secretary has already prepared our cards and some will be mailed today. This noon's mail included the first '06 cards, one from the Howard Barneses at Plymouth and one from Frank Benham, who is making a good recovery from an eye operation. When you read this, we will be well on our way in a new year. May it be a good one for the members of '06. — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills, 82, Mass.

• 1907 •

A welcome letter was received last December from Phil P. Greenwood, 3708 38th Avenue, Brentwood, Md., stating that he retired from active professional work on March 31, 1950. Ever since 1912 Phil was associated with the Panama Canal, with office in Washington, and beginning in 1936 had been inspecting engineer. He writes that on Thanksgiving morning in 1949 he severely injured his left knee in an accident — not in an automobile, but in his own back yard — and was obliged to be away from work for nearly four months, and, as he was eligible for retirement anyway, he voluntarily retired at the end of the month. His knee has never fully healed and troubles him at times. He writes that he finds many things to do around his home, including organic gardening with flowers and with a few vegetables. He and his wife have a married daughter who lives within a few miles of Brentwood, and a married son living in Springfield (a suburb of Philadelphia), Pa. The son is an engineer at Piasecki Helicopter Corporation. There are four grandchildren.

Last November I received from Albert Stevenson and his wife Ruth a quite unique announcement stating: "The Stevensons are leaving Ridgewood, N.J., as of December 1, 1953, to eventually make their permanent home at Wolfeboro, N.H., on the shore of beautiful Lake Winnepesaukee. We expect to enjoy life there to the fullest extent from very early spring to late in the fall. Wolfeboro, the place where the Stevenson clan started many years ago, has always been a second home to us." Steve's temporary address until March 15, 1954, is care of Miss H. B. Stevenson, 41 Princeton Street, East Boston, Mass., and permanent address after that date, North Main Street, Wolfeboro, N.H. — Ed Lee's address has changed from Biddeford Pool, Maine, to 625 Camino Del Monte Sol, Sante Fe, N.M. Mrs. Lee's health has required moving from the eastern part of the United States. — Frank MacGregor and his wife are at their winter home in Tryon, N.C. They expect to live there until about the middle of next May. Mail address is P. O. Box 1522, Tryon.

The report from the office of the M.I.T. Alumni Fund giving the record of contributions by classes as of October 30, 1953, this being the latest report I had at the time of preparing these notes, shows that our Class had given a total of \$1,450, which was greater than the total of any other class prior to 1922, and which was exceeded by only three classes in the entire list. This is, of course, gratifying, but when I state that this amount was given by only 44 men, or 16 per cent of the class roll, you will agree, I feel sure, that it is not commensurate with '07's interest in giving or ability to give. When you read this in February, if you have not yet sent in your check, won't you do so promptly, for as large an amount as you consider proportionate with your financial situation. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

• 1909 •

Molly Scharff, XI, has agreed to serve as consultant to the chairman of the Task Force on Water Resources and Power of the Commission on Organization of the Executive Branch of the Government (the new Hoover Commission) appointed in accordance with the Act of Congress, approved July 10, 1953. This is a high honor that has been conferred on Molly.

Although Francis Loud, VI, Chairman of the 45th Reunion Committee, cannot as yet make a definite report, he advises that progress is being made on reunion arrangements and says to be sure to hold June 12 open.

We have received notices of the deaths of two more classmates, Harry V. Kenerston, VI, who died on October 29, and Leland Clapper, I, who died on November 19. Our records show that since graduation Harry lived and was employed in London, Ontario, until 1934 when he joined Penmans Ltd., in Paris, Ontario. He was connected with this firm at the time of his death.

Leland graduated from Iowa State College in 1907 and then entered the Institute. He lived for several years in Duluth, Minn., and for a long period was a regional adviser, that is, one who advises students graduating from the Institute of the business opportunities in a particular region. Within the past year he moved to Van Nuys, Calif., where he lived at the time of his death. — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: HARVEY S. PARDEE, 549 West Washington Street, Chicago 6, Ill.; MAURICE R. SCHARFF, 366 Madison Avenue, New York, N.Y.; GEORGE E. WALLIS, Wenham, Mass.

• 1910 •

It is with regret that I announce the passing of G. Howard Allen in April, 1953, and George Miers on September 24, 1953. Also, Ed Stuart passed away November 20, 1953. Ed Stuart was one of the saddest casualties of World War I, and I do not think it would be amiss to give the classmates a résumé of Ed's activities during World War I and his life up to his passing. He entered the service as captain on August 17, 1918, and was promoted to major on February 19, 1919, in the Sanitary Corps. He was assigned to the Balkan front and was in the advance of the Serbian Army through Serbia. He served as senior engineer to the American Red Cross Sanitary Commission giving relief in the typhus epidemic. He was director of the American Red Cross Sanitary Commission to Serbia and director for relief in the Balkans. He received the Medal of Commander San Sava and the medal of Serbian Red Cross and was recommended for the Distinguished Service Medal of the American Red Cross.

Soon after the war Ed's health started to fail due to his contact with typhus and became worse so that he became confined to a wheel chair. About 10 or 15 years ago he entered the hospital and was confined to his bed until he passed away. A group of classmates always visited him on Alumni Day and he was always delighted to see them; such times together brought

forth many personal episodes which transpired when we were students at M.I.T. He was a great baseball fan and the television set which the Class gave him when television was first started in Boston gave him some pleasure in watching the games. It is to casualties of war, like Ed Stuart, that the citizens of this country should pay the greatest tribute, and we all hope there will be an extra award to such casualties in the great beyond.

During the past month I have received greetings and letters from Charles Almy, Jr., Fritz Arnolt, Carroll Benton, Bob Breyer, Dick Fernandez, Louis French, Allen Gould, Harry Hale, Cliff Hield, Henry Harrison, James Stevenson, Luke Sawyer, Charles Wallour, E. Potter, Dick Bicknell and Otto Rietschlin.

Allen Gould writes as follows: "I have not had too many contacts with classmates since I last wrote. I was at Babcock and Wilcox at Beaver Falls, Pa., on Friday, and hoped to see Luke Sawyer again but he was out that day. He is now vice-president which is an indication of the good work he has done building up that large organization over the many years he has been with it. I was East this past summer for a short vacation again at Edgartown and came back by way of Marblehead where we spent the first two days of Race Week with Harry Hale and wife — a very interesting two days catching up on New England doings even as far back as his World War II experience in Italy and the days of witchcraft. Harry had just acquired a new Bluenose Class sloop which performed well — better than his dinghy which somehow managed to spill your classmates into the harbor. Saw Hal Billings briefly at Brae Burn en route to Marblehead.

"There are no 1910 men left around Cleveland except me, so there is not much local news. A couple of weeks ago some of our in-laws passed through en route home to Minneapolis and they confirmed a report that Cliff Hield is in fact a country gentleman — with his new home completed. Barbara and I were up there two years ago before his move to the country and he was an excellent host even then."

Dick Fernandez writes: "Nothing noteworthy ever seems to happen to me — in outrageous good health and actively in business."

Carroll Benton writes: "Received your letter of 11/30 upon my return from a five-weeks auto trip to New Orleans, Fort Lauderdale and other southern points. Came back sooner than we originally intended. While in Ft. Lauderdale, Mrs. Benton had a funny spell which the doctor down there thought could have been a slight cerebral hemorrhage, so at his suggestion we came home to seek medical advice. Have had certain blood tests taken and the doctor is coming today to report on them, and so on. Of course, as a result of all this my blood pressure shot way up. Am taking medication and I hope he will find it has come down some when he takes it again today. I feel pretty good, except kind of jittery at times. Oh well, old age I guess." — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

• 1911 •

When a man's passing elicits editorial comment in the *Times* (London, England), it is wonderful tribute and here, in part, is the editorial tribute to our late illustrious classmate, under the heading "The Art of Etching": "Mr. John Taylor Arms, the well-known etcher and president of the Society of American Graphic Artists and of the Tiffany Foundation, has died in a hospital in New York at the age of 66 . . . His early training [at M.I.T.] in architecture [he actually practised as an architect for some time] is readily discernible not only in his choice of subjects but also in the solidity of the drawing."

"This does not mean that his etchings and engravings savour of the meticulous attention to detail of the architectural draughtsman. This would have been an abuse of a medium that the erratic genius of Meryon had endowed with the wings of fantasy, a quality which no etcher since could fail to emulate. Yet in his best-known works, the plates of the cathedrals of France and Italy, Arms rendered the buildings so that, for all the exuberant fancy of some of the flamboyant subjects, they yet stood firm and four-square on their sites. . . . He married in 1913 Miss Dorothy Noyes and they collaborated (she writing the text) in *Churches of France, Hill Towns and Cities of Northern Italy and Design in Flower Arrangement*. He also published in 1934 a *Handbook of Print Making and Print Makers*."

Thanks to O. W. Stewart, I, who wrote in early December that "it seems that nearly as fast as I drop a responsibility another appears," your Secretary's attention was called to an article in the December, 1953, *Coronet*, entitled "Admiral of Inventions." If you missed it, make sure you look it up and read it! Of course by now you've guessed the subject — the author, Henry Lee, expresses it thus: "Luis deFlores is one of the great pioneers of wartime and peacetime aviation."

Starting in 1939, when this "dapper mustachioed man, at the ripe age of 50 — oil engineer, inventor and dean of American private pilots — who had grown up with flying from the days of the Wright brothers" went on active Naval duty, the article tells how "though he lost 16 pounds keeping up with students half his age there at Pensacola Naval Air Training Station, deFlores whipped through the 11-month course in seven weeks," and "most important to all of us, the experience of 'learning to fly' opened his eyes to a deadly flaw in our military training program."

Then follows a dramatic story of "Project 610 . . . named after the Washington address, 610 H Street, Northwest, where he promptly set up shop in an old auto show room," a revolutionary program whereby Navy fliers learned to fly "on the ground."

The author points out that "special devices" was only one facet of Monk's amazingly many-sided career. He tells how as civilian oil engineer, he built refineries all over the hemisphere and contributed basic inventions to the oil

industry. "One of the handful of reservists ever to reach the rank of Rear Admiral," author Lee continues, "he holds the Legion of Merit and Distinguished Service Medal and an honorary commandship in the order of the British Empire. He belongs to such elite aerial groups as the Quiet Birdmen and Wings Club, and can even wear the Brazilian Air Force wings, awarded to him for introducing synthetic training methods there."

In a flash-back, the author then describes the first 50 years of Monk's life in a most interesting and stimulating manner and finally, describing his post-war activities, tells how Monk "came up with a plastic bookbinding process, currently used by one of the biggest general publishers in the country, and has other ideas in his mind or on the drawing board." He tells also of the electric heart stimulator and a "cough" for iron lungs, recently devised by his deFlorez Engineering Company in New York.

In conclusion, the author states that Monk feels deeply that "the U. S. must throw everything into intensive education and all-out research, for the deadly race of our time, as he sees it, is between free world brains and overwhelming totalitarian brawn." A final quote from our own Admiral deFlorez brings the fine article to an exciting conclusion: "We're not going to survive by baseball bats or bayonets — we'll only survive by ideas — and they've got to come from research. Thinking is our only way out!" Please, if you missed it, make sure you look it up and read it!

At the end of November we learned from the Boston Sunday *Herald* that Emmons Whitcomb, X, had been appointed to the staff of Wellesley Travel Service, located in Wellesley, the college town. Said the announcement: "Mr. Whitcomb started in the travel industry in 1911 with Raymond and Whitcomb Company in Boston and became vice-president, staying with the firm until 1931 when he was made New England Divisional manager of United Air Lines. In 1945 at the close of World War II, he was appointed to the staff of M.I.T. and remained until 1947, at which time he re-entered the travel agent field to become vice-president of the University Travel Company in Cambridge."

"As a board member of the American Society of Travel Agents he is chairman of the educational advisory committee and also serves as a member of the air advisory committee." Emmons and his wife, Reta, live at 77 Wood Street, Lexington 73, Mass. Good luck to you in your new connection, Emmons!

Having accepted an appointment from the government, effective January 1, to serve as deputy assistant secretary of defense for applications engineering, William Hennick Martin, VI, for many years vice-president in charge of station apparatus and outside development, quality assurance, and design engineering for Bell Telephone Laboratories, first in New York City and of late years in Murray Hill, N.J., will retire from the phone company at that time and report to Frank D. Newbury, Assistant Secretary of Defense.

After receiving a bachelor of arts degree from Johns Hopkins University, where he was a Phi Beta Kappa scholar, Bill came to us in our sophomore year and received his bachelor of science degree with us in 1911. He joined the engineering department of A. T. and T. immediately, and so has continuously been engaged in telephone research and development with the Bell System since graduation. He transferred to Bell Laboratories in 1934, when the development and research department of A. T. and T. was consolidated with the laboratories, and held a number of executive positions in transmission development, switching research, station apparatus development and apparatus development, prior to his election as vice-president in 1949. Best of luck to you in your new government assignment, Bill!

Had a nice letter from Jim Campbell, I, of Eadie, Freund and Campbell, engineers, 500 Fifth Avenue, New York 36, N.Y., following the third Silver Stein Dinner of the M.I.T. Club of New York on December 4, when Gerard Swope '95 received the award which last year went to our honorary member of 1911 — Senator Tom Desmond '09 of New York. This year's presentation, Jim wrote, was made most gracefully by Dr. Karl T. Compton, "who recalled how Dr. Swope was the first one to advocate having an 'understudy' to fill the shoes of the chief executive at M.I.T." As a result of Dr. Swope's forethought, you will remember, in 1930 when President Stratton passed away, Dr. Compton was ready to take the helm, he reminded his hearers, and "for the first time in the history of the Institute, the death of the president had not interrupted the orderly conduct of Institute affairs."

Jim added that there was a good turnout at the Century Room at the Commodore Hotel, but he and Toni, not finding a 1911 table, took seats at the table marked "09-15" and sat between Mollie Scharff '09 and Ken Boynton '15 and their wives. The only other '11 man revealed by a careful search was Walter Welch, VI, who was sitting at the '04 table. Jim thoughtfully sent a menu, which reveals the fact that Tom and Alice Desmond were among the patrons and patronesses of this annual Manhattan affair.

Fred Daniels, VI, Chairman of the Board of Riley Stoker Corporation, Worcester, says he recently had renewed his acquaintance with Harry Lord, II, and Gordon Glazier, VII, both with Hollingsworth and Whitney, Boston, in connection with the sale of a boiler. Just noticed that Johnny Bigelow, IV, city engineer in his native Marlboro, Mass., has been re-named treasurer of the Chamber of Commerce there, having given up his secretarial duties to concentrate on the treasurership.

Having received from the Alumni Register a new address for Gardner George, I, 1731 New Hampshire Avenue, N.W., Washington 9, D.C., I am awaiting word from him as to why he left Albany, N.Y., where he has been located for lo, these many years. Will pass along the information, when I receive it. Here, in conclusion, are two other new addresses:

Captain Ralph T. Hanson, USNR, XIII-A, 40 Legare Street, Charleston 4, S.C., and Armand H. Peycke, II, 412 Greenleaf Avenue, Wilmette, Ill. Happy Valentine's Day, and if by any chance you haven't sent in that pledge to the current (1953-1954) Alumni Fund, now is the time so to do. — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Gardner, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

Ken Cartwright, for some time General Mechanical Superintendent of the New York, New Haven and Hartford Railway, has just been appointed consulting engineer, with headquarters as before at New Haven. Ken joined the New Haven in June, 1914, and has been with them ever since, except when he served as a Navy lieutenant during World War I. He progressed from assistant to engineer of tests in 1920, to general mechanical inspector in 1923, assistant mechanical engineer in 1925, mechanical engineer in 1935 and chief mechanical engineer in 1944. Congratulations to Ken!

Vincent L. Gallagher has had a promotion to deputy U.S. manager of the Pearl American Group. He has also been advanced to executive vice-president of the Monarch Fire and Eureka Security F and M Insurance Company. The western Massachusetts papers were carrying columns about the re-nomination of Pierre Drewsen for Mayor of Northampton, Mass. Pierre upset the machine at the last election and went into office as an Independent with a tremendous majority. This year he was defeated by 520 votes. The fluorine issue which has created a great deal of controversy in this city was also defeated.

Mr. Thompson of Snow Inn is crowding me for the names and addresses of those who would be at Harwich Port in June. Please sit right down and write me that you will be there so that we can make definite reservations for you. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. *Assistant Secretaries*: LESTER M. WHITE, 4520 Lewiston Road, Niagara Falls, N.Y.; RAYMOND E. WILSON, 8 Ogden Avenue, Swarthmore, Pa.

• 1913 •

Your secretarial staff was unable to carry on the class notes last month because Fred Murdock was involved with his plans to sojourn at an early date in Orlando, Fla. The Assistant, buried in the trials and tribulations of moving from Stoughton, Mass., to his old town of Canton, Mass., failed to give you the side lights, to say nothing of the high lights, concerning activities of the Class.

Stanley W. Parker, once an active worker in our '13 gang has again favored us with a short letter. Stan has retired as manager for Wheeler, Lovejoy and Company, at Chicago. He advises that he is now enjoying himself at 1731 Las Tunas Road, Santa Barbara, Calif. Well, my boy, in your retired state take pen in hand, sit thee down and describe the publishable thrills of your life to date. I shall be waiting anxiously and patiently for your descriptions.

Howard S. Currier has carried out his threat as he promised last summer, and now resides at 334 South Catalina Street, Los Angeles 3, Calif. Have all of you guys grown soft? So you leave our northern climate for sunny Cal. Howie, spare a few minutes from your golf and sun baths to enlighten your less fortunate classmates of the advantages in the realm of pleasure.

William R. Mattson ran true to form by winning a difficult race and is again a member of the board of aldermen. He was chosen the vice-chairman of the board this year. Just what does that mean, Bill? He is the "Tom Dewey" of Newton, Mass.

Lester F. Hoyt again springs into print. He recently collaborated with Lawrence Flett¹⁸ in writing a scientific paper, "Adsorption of Detergents in the Dyeing Process." This paper was published in the *American Dyestuff Reporter*. Lester as manager, New Products Division, Allied Chemical and Dye Corporation, has spent many years in research and development of new uses of synthetic detergents. He has been the author or coauthor of about 30 scientific papers in various fields, and holds several patents on soaps and detergents. Keep up the good work. We hope that by the 50th reunion, or possibly the 43rd, you will be able to stop writing long enough to favor us with your presence.

Several of our classmates have been reported ill or hospitalized: Ken Blake, Finney Farm, Croton-On-Hudson, N. Y.; Russell E. Leonard, 192 Hendickson Avenue, Rockville Centre 5, Long Island, N.Y.; William F. Wallis, 5219 42nd Street, N.W., Washington, D.C.; Gene Burrell, 3501 Stadium Drive, Fort Worth, Texas; Albert D. Conant, Danvers, Mass.; Howard F. Sutter, 4220 Parrish Road, Fort Worth, Texas. (Why don't you Fort Worth '13 mates get together with Tom Byrnes?) Halsey B. Horner, 34 Greenwood Road, Wellesley Hills, Mass.; Malcolm Lewis, Durham, N. C.; Louisa M. Norton, M.D. (Effie MacDonald), 75 Winter Street, Rochester, N.H. We surely hope that all of the noncombatants have either recovered entirely or are on the road to recovery. Why don't some of you leisure boys write to any or all of the above? Then they could send on your messages for me to enjoy and note. Ernest Weller, 98 Durand Road, Maplewood N.J., reports he is indisposed. Get well soon.

We trust Clarence S. Roe, P.O. Box 816, Lansing, Mich., enjoyed his visit to England. How about a description of your trip to Churchill's Isle? Leroy R. Block, 501 South Avenue, Pittsburgh 21, Pa. — what are you doing in the Smokey City? Did you have mince pie Xmas for breakfast? Ralph L. Thomas, 803 St. George Road, Baltimore 10, Md. — yes, Clarence Berry and his charming wife represented you Baltimore-ites very well at the reunion, but you were certainly missed, Ralph. Warren E. Glancy, 75 Riverview Avenue, Waltham, Mass. — we missed you at the reunion; let's hear from you soon. Ellis Hartford, P.O. 9131 Sanford Station, Los Angeles, Calif. Note that Stan Parker and Howard Currier are close to you. Pick up the phone and join

them for lunch. George A. Taylor, 916 West Dans Street, Burlington, N.C. How was the trip to Oregon? Write and give us your comparison of the East and the West Coasts.

Bob Weeks informs us that Robert Kendrick Wright, one of our loyal classmates of the Philadelphia District, died suddenly in the early days of December. Our heartfelt condolences go to his sister, Miss Madeline Wright. Ken was plant manager at the Baldwin-Lima-Hamilton Corporation, Eddystone, Pa., for 25 years.

Well, your old scribe, Fred Murdock, will hibernate at the Hotel Wyoming, Orlando, Fla., from January 10 to March 10, 1954. All of you who remember Freddy and his "Clark Gable" ensembles at Oyster Harbors Club can well imagine the fluttering hearts on Orlando Beach. Bon voyage, Fred; come back soon.

Please note several address changes: George P. Capen, Assistant Secretary, 623 Chapman Street, Canton, Mass.; Manuel Font, 300 Comercio Street, Mayaguez, Puerto Rico; J. Warren Lovell, 8 Progress Street, Pawtucket, R.I.

To all of you muscle-bound '13 men, or other silent partners, relax and let the rest of us hard working toilers know what you are doing and why. — FREDERICK D. MURDOCK, *Secretary*, Murdock Webbing Company, Box 788, Pawtucket, R.I. GEORGE P. CAPEN, *Assistant Secretary*, 623 Chapman Street, Canton, Mass.

• 1914 •

Classmates have long since come to know that they can rely on Charlie Fiske to do the unusual and to be grand about it, too. Instead of having the usual '14 dinner in New York, Charlie just decided this year to invite all greater New York '14 men, as well as any out-of-towners who could make it, to be his guest for dinner at his apartment on December 2. Here we had a most wonderful time, and laid the basic plans for the 40th reunion next June. In addition to Charlie's own well-known hospitality, his genial wife Marie added her usual superb charm.

Numerous reunion matters were discussed, and they will be fully covered by a general letter to the whole Class. You will receive that letter shortly after this issue of *The Review* reaches you. One item of particular importance is being reported here. For future officers, it was agreed that a nominating committee should be set up to present a slate of officers for election at the reunion. Charlie put the names of all who had attended the last four reunions into a hat, and then had four drawn by George Perley. Those drawn were Faunce, O. C. Hall, Atwood, and Hadley. These four will select three more, and this committee of seven will choose their own chairman. The committee will then present their slate at the reunion.

Those attending Charlie's superb party were Affel, Calver, Covitt, Dawson, Faunce, O. C. Hall, Hsi, MacCart, MacLeod, Mayo, Morrison, Ober, Owen, Peaslee, Perley, Perry, Rauber, Reber, Snow, Somerby, Spitz, Whitwell, Charlie, himself, and your Secretary. Barratt,

Gould, Parsell, and your Assistant Secretary, Ross Dickson, had expected to attend, but last-minute events required them to cancel their reservations. Paul Owen and your Secretary were walking together towards your Secretary's hotel when suddenly they were surrounded by fire apparatus. Paul then started to convince your Secretary what a great city New York was and how an ordinary fire could never get a real start — which proved to be right — but who should appear on the scene but Bert Hadley from Middlebury, Vt. Bert had been attending a nearby dinner of the Sportsman's and Wild Life Association we later learned.

Skip Dawson has been re-elected Director from Massachusetts to the National Association of Manufacturers. Your Secretary saw Skip and Norman MacLeod, a former Director from Rhode Island, attending several sessions, as were a very large number of other Technology men.

Howard Borden could not attend Charlie's dinner, because he was teaching school that night. Howard teaches Esperanto on Wednesday evenings at the Trenton Adult Education School. Professor Harry L. Bowman has been promoted to Dean of Faculty and Dean of the College of Engineering of Drexel Institute of Technology.

Roy Dinsmore, Vice-president in Charge of Research and Development of Goodyear Tire and Rubber Company, has received an honorary membership in the National Council of the American Institute of Chemists. The award was for his contribution to the advancement of chemistry, particularly in the field of rubber technology.

The Audio Engineering Society has awarded honorary membership to Edward C. Wente, Research Consultant of recognition of his "outstanding achievements in audio engineering." Wente has been with the Bell Laboratories for the past 37 years, and his commendation was for his inventions, which related, for the most part, to acoustics and acoustical instruments, with special reference to their application to transmission, recording, and reproduction.

Bill Simpson, fruit grower from San Diego, writes that he certainly hopes to make our 40th reunion, but due to his wife's illness, he never knows far in advance what his plans may be. Best of luck to you, Bill, and we all hope that you will be with us.

Another uncertainty is Alden Crankshaw. Alden is eastern service manager of Acheson Colloids Corporation. Alden, whose home is at Port Huron, Mich., came east in June. While east he became very ill and returned to Port Huron on a stretcher. All fall Alden has happily been making a recovery, although slow, but expects to be back full time at his office by the New Year. If so, he expects to be with us in June. More power to you, Alden. We expect to have you with us in June.

From time to time your Secretary receives word from classmates of their illnesses, which is full notice that we are not as young as we were 60-odd years ago. Bob Moorehouse has been bothered

with his eyesight and has had to undergo eye surgery. Bob says that he can do very well in the day time but he does not drive after dark. He is, however, planning to attend our 40th. It will be recalled from an earlier reference in these notes that Bob has retired on pension from the Goodyear Tire and Rubber Company and is now living in Bryn Mawr, Pa.

Bob Townend writes that he is busy getting rid of 25 years' accumulation in his present establishment. He is moving to Morristown, N.J., because the Allied Chemical and Dye Corporation, with whom he has been associated for many years, has moved its Laurel Hill Research Laboratory from Long Island to Morristown.

Ralph Salisbury has written Paul Owen that his work in Asmara, Eritrea, is about completed, and he and Mrs. Salisbury expect soon to fly to Tripoli and then back to the States in time to attend our 40th. Ralph should have some tall stories to tell!

Unhappily, these notes always seem to have a sad ending. Word comes from Mrs. White that her husband, Gordon Winthrop White, died last January after a long illness extending for nearly seven years, during which time he was nearly always hospitalized and was for the most part paralyzed as the result of cerebral hemorrhages. White was a Delta Tau Delta and came to the Institute from Hartford, Conn. — H. B. RICHMOND, Secretary, 275 Massachusetts Avenue, Cambridge 39, Mass. ROSS H. DICKSON, Assistant Secretary, 126 Morristown Road, Elizabeth, N.J.

• 1916 •

Although there is probably no need of it, we will mention in passing that Valentine's Day is just around the corner; and it's an ideal occasion to remind our "sweetheart" once again of how much she has meant to us over the years.

Our hearty congratulations to Steve Brophy on his recent election as a Life Member of the M.I.T. Corporation.

We were especially pleased with a very long and interesting letter about Joel Connolly from which we quote in part below: "Joel works for the United States Government in the Foreign Operations Administration, formerly the Mutual Security Agency. He is an advisor to the Health Department of the Philippines and he aids the men on the staff of that department. He is doing public health work mostly in the improvement of water supplies for small towns and villages. There is a high rate of illness and death from waterborne diseases here and it is hoped to reduce them through the effects of his work. . . .

"Joel's office is on the second floor of a new four-story building, located on Dewey Boulevard which skirts the shore of the bay. It is modern, well lighted, air-conditioned and in every way the best office building by far he has ever worked in. The people he works with, both Filipino and American, are very agreeable and pleasant to associate with. Practically all are high grade experts in their respective specialties and many are widely traveled and most interesting to talk with. They usually have been actuated, when

deciding to come here, by a desire to help the less advanced peoples and at the same time strengthen the free world. The average calibre of the people with whom he deals is very high. Many of the Filipinos were educated in the United States, and a few of them he knew while they were in America. . . . So far, when Joel has been in mountainous country, he has been too busy, except once, with his work to do any climbing. That one time, he climbed an 8,000-foot active volcano, starting at the 3,000-foot level. He had as companions another American and four Filipinos. The latter were armed with long bolo knives for the double purpose of cutting through jungle vegetation and groups of Huks, if necessary. However, he did not encounter any Huks, we are happy to say. This volcano, on February 1, 1814, buried with lava the town of Cagsaws at its foot, killing the inhabitants and leaving only the stone church tower still standing proudly erect above the now solidified lava flow. Joel did a little rock-climbing practice on the exterior of this tower in order to get up to a vantage point for taking pictures. . . .

"It is necessary in the course of Joel's work for him to visit all parts of the Philippines. After more than a quarter of a century mostly spent working inside an office, with but little opportunity for field work, this is indeed a welcome change. To save time, he flies between islands and uses cars (often jeeps) where roads are bad, after he gets to the islands where he is to work. In the course of these trips, he swam in the China Sea by moonlight on a Friday night and was on a mountain road 7,600 feet above sea level Saturday afternoon, in central Luzon. He has seen the 'eighth wonder of the world,' namely, the rice terraces in Banaue. These terraces were a thousand years in building, and are most interesting. They are like huge flights of stairs on the mountain sides. Near there, he saw Igorots, armed only with spears and knives, each dressed in a G-string and a small, round cap which serves him as a pocket." Joel would welcome letters from classmates. His address is: FOA-STEM, A.P.O. 928, care of Postmaster, San Francisco, Calif.

It was nice to hear from Ted Strieby, who sent us this interesting letter: "I am glad to give you a brief note on my present activities because, along with many others, I have moved out of strictly technical work and am now in public relations. This change came after 35 years of research and development with the Bell System, including 12 years at the Bell Telephone Laboratories where I was in charge of the development of coaxial cable systems from their inception to commercial use. Now my job is giving lecture-demonstrations and trying to help many other lecturers and other public relations people throughout the Bell System to tell what has been accomplished and what we are trying to do to make telephone service better and to keep its cost as low as possible. With so many new technical advances under way and in the offing, it becomes my enjoyable duty to follow these and to interpret their meaning to the public. I had the pleasure of running into Walter Binger in Vermont last summer, following the marriage of

one of his children to a very close friend of our family."

We are pleased to report a recent testimonial dinner which was given in honor of Bill Drummey at the Sheraton Plaza Hotel in Boston "upon his 60th birthday to congratulate him on 30 years of practice and to do him honor for his personal, civic and military honors. This dinner will come and go, but to those present and the hundreds who were unable to be here, the image of a distinguished Irishman with a strong character and a big heart will long remain." The following portion of the written tribute paid to Bill is especially worth noting: "There are four particular qualities you must cite in anything about Bill Drummey. You could itemize them as: (1) A tremendous sense of civic responsibility. He is a past president of Boston Kiwanis (1929) and his presidency of the Boston City Club (1940, re-elected 1941) brought that organization to its highest peak. He is the present adjutant of the Ancient and Honorable Artillery Company; past vice-commander, Crosscup-Pishon Post, A.L.; member of the Charitable Mechanics Association and the Charitable Irish Society. In 1949 he was Boston chairman for the Heart Drive, one of but many community tasks. There is also (2) a deep-rooted love of learning and culture. In 1946 Bill exercised (at age 53!) his G.I. privileges and earned a master of arts. Five years later he was awarded the degree of doctor of science. A voracious nightly reader, he also is a competent amateur artist as those who receive his hand-drawn Madonnas each Christmas will testify. His poetry on many occasions, particularly as annual poet of the Ancients, is not unskilled.

"An inveterate traveler he has seen most of the Western Hemisphere from boat, schooner, car or hunting trip. The love of learning naturally leads to a third characteristic (3) a tremendous command of speech. From the days of 'Public Declamation' at Latin School the low, modulated voice of Bill Drummey has been able to captivate audiences from ten to ten thousand. A master at volume control, diction and phrase, some of his major addresses are still discussed today by audiences. And while all this evaluation would probably bring forth from his keen sense of humor a depreciating remark, it all sums up into (4) a wonderful personality. It is made up of charity and kindnesses to hundreds of causes and thousands of persons, from giving a building to a Jewish congregation to giving up nights to teach boys boxing. It is made up of promises that are not broken and leadership that is fair and this has won him a host of friends. It is made up of an individual but firm sense of his Catholicism, the religion that guided him over the death of two of his sons, Nicholas and Michael, and through many personal problems." Thanks for the lovely Christmas card, Bill.

Earl Townsend keeps us up to date on his doings with this letter: "I had hoped to get down to the Cape this summer, but long distance travel interfered this year as well as in 1952. The Factory Mutual Engineering Division is still my chief interest where I am still employed by class-

mates Hovey Freeman and Ed Williams. Have just returned from Arkansas and was greeted in the office as 'The Arkansas Traveler,' courtesy American Airlines. The four grandchildren — all girls — are my principal hobby but I am assured of further results and, like Bob Wilson, will be delighted with a male descendant. I hope I can be at the 1954 reunion." Hope you can too, Earl. We'll be looking for you there.

Steve Whitney recently wrote that all is going well with him. Also, we had a very fine letter from Chuck Loomis and were pleased to learn that he is well. Glad to hear, too, in a recent letter from Phil Baker that he is well and looking forward to February 6 when "the local Alumni are going to put on an all-day engineering M.I.T. seminar with dinner, and so on, with the help, urging and blessing of Cambridge."

An article entitled "Harbor Hobby" recently appeared in the Pittsburgh Press and had this to say about the doings of our classmate, Frank Darlington: "The interest of the hobbyist in the choice of items he collects is wide and varied, ranging from an energetic effort to gather up the world supply of grandfather clocks to the proud possession of chips of stone from structures of antiquity. However, to Frank G. Darlington of Sewickley should go some special award for coming up with a refreshing new item on the collector's list — at least one that is new in the realm of hobbies. Mr. Darlington collects harbors! . . . Sailing is a traditional part of the annual vacation schedule of the Darlingtons when they open their summer home in Hyannisport, Mass., each June. As a matter of fact, this marks the 57th summer that Mr. Darlington has turned up as a member of this colony so popular with Pittsburghers, and where he and his wife ultimately expect to make their permanent home . . . Frank Darlington began his cruising hobby in 1935, the year he began his 'collecting.' Today the result, totalled in an unofficial log, boasts a record of more than 60 Maine harbors visited. This list probably will have been revised when he returns to his Sewickley home in November, thus adding new triumphs to the 1952 score. . . .

"On his list of harbors appear such whimsical names as Diamond Cove, Falmouth Foreside, Biddeford Pool, Pretty Marsh, Burnt Coat, Christmas Cove, and many others. In one lonely harbor the party sighted only a whale and a water lily cup. They specialize in deserted harbors and coves where the only sounds are made by fish hawks, gulls, herons and seals. Pulpit, Christmas, Hornbarn Coves and Rock Island were the most attractive, both for their beauty and protection in all winds. . . . There is certainly no lack of comfort aboard the trim 56-foot schooner. The two bunks in the owner's stateroom are as luxurious as any bed ashore. Next is the main cabin with two built-in bunks and two transoms to accommodate four people. But for extended cruises, it is the stowage space and not the number of bunks that determine the comfort of the passengers. No more than two are ever taken aboard to occupy the main cabin, which is approximately 10 by 14 feet and will seat about 10 people. It also contains

a radio telephone on which the sailing party has talked to friends as far away as New Mexico. The Darlingtons lived aboard the *Marmion* for three weeks in 1940 when they treated themselves to a steward and took in the World's Fair from the anchorage in Flushing Bay. Sometimes the couple is accompanied on a cruise by their son, Edward, or their two married daughters and their families. . . . As inventor of the Darlington 'Currentographs,' Mr. Darlington has achieved wide recognition. This precision instrument provides at a glance the directions and velocities of tidal currents. Also of special aid to pilots of seagoing craft is his 'Correctcourse' which solves problems involving course steered, speed through water, and so on. It is calibrated to read any course from any angle on the bow." Just imagine how much pleasure it would be to have Frank teach us his hobby.

Again we have the unpleasant task of reporting deaths of members of our Class. On November 1, Ted Strong passed away; and on November 4, Paul Thomas died. Expressions of sympathy on behalf of the Class have been sent to the families of the deceased members of the Class.

Changes of address received include: Major William W. Hamilton, P.O. Box 373, Cary, N.C.; Oden B. Pyle, Jr., 508 East Valley Green Road, Flourtown, Pa.; George D. Camp, Apartado 1005, Mexico City, D.F., Mexico.

That winds it up for another month. We'll be looking forward to being with you on the pages of the March issue of *The Review*. —RALPH A. FLETCHER, Secretary, P.O. Box 71, West Chelmsford, Mass. HAROLD F. DODGE, Assistant Secretary, Bell Telephone Laboratories, Inc., 463 West Street, New York 14, N.Y.

• 1917 •

The Carrier Corporation of Syracuse sent out a booklet in November which their president described as the most important they ever published. It defines the new organizational structure designed to shift from the functional type to one based on products and markets. A new operating group is the Unitary Equipment Division responsible for reciprocating compressors, room air conditioners, year-round residential units, and other self-contained equipment. This division is headed by John H. Holton, as vice-president and general manager of the division. He also continues to have overall direction of the Allied Products Division which he organized and with which he has been experimenting for a period of some months. John's photograph illustrating the brief biographies of key Carrier executives shows clearly how little his responsibilities have aged the young man. Incidentally, he has a son now in his first year at the Institute.

John L. Parsons of Waterville was recently elected chairman of the Maine section of the American Chemical Society.

Tom Meloy promised to contribute word on '17 men in the vicinity of Alexandria, Va., for this issue of *The Review*, and the following is his report: "The pickings on the members of the Class of 1917 around here are pretty slim. I guess none of us does much any more. We checked

everyone we knew of in this area and the following summary is everything we got: George E. Walker—As chemical engineer with General Services Administration recently assigned to programming research and development in connection with nickel processes in Nicaro, Cuba. Travels back and forth. Part of the world nickel production program. Son, George, who was married last June, is now in second year of medicine at University of Virginia.

"Charles Gager — Is thinking of retiring in June (Bureau of Ships). Son Charles married last May; daughter Nancy graduated from Wellesley last June; youngest son graduating from high school this year. Captain George W. Henderson (U.S.N. Retired)—About to go South for the winter. Doesn't see many classmates nowadays. Living in Arlington, playing golf, and travelling quite a bit.

"You know, I am sure, everything I am doing. We hope to move into our new laboratory near Falls Church by next October. It has grown to about 250,000 feet and we plan to do everything from the study of locomotives to the study of solid state physics. As a farmer, I am a bust." — Tom Meloy.

Thomas W. Ryan, Jr., of Cleveland, Ohio, has been appointed vice-president and general manager of the Alton Brick Company, Alton, Ill. He will direct and co-ordinate sales and manufacturing of the company. In a recent letter to your Secretary, Tom writes: "Last night I found the December issue of *The Review* on my reading table. It reminded me that I have not accounted to you since I left Boston in May, 1949. It was with regrets for great joy came from meeting, once in a while, with the fine crowd of '17 men who are around Boston. As always we follow those avenues which our business judgment dictates are most attractive, so I found myself in Cleveland — and now in St. Louis. All of which is described in the enclosed clipping from the St. Louis *Post Dispatch*. To support my claim to being the oldest father of the youngest family of any '17 classmate, I am enclosing a recent snapshot of our four youngsters — from 12 down to Tommy, Jr., aged three. To all my best wishes, but I must ask — any challenger?"

At the 13th annual meeting of the Cleveland Health Museum's National Advisory Council on Tuesday, November 10, Hotel Statler in New York City, Clair Elsmere Turner, D.Sc., Dr.P.H., received the 1953 Elisabeth S. Prentiss National Award in Health Education. The Prentiss Award is given by Museum trustees in recognition of outstanding achievements in the health education field. Dr. Turner's citation read: "A True Professor, Master Architect of School and Adult Health Education, Respected Author, World-Wide Lecturer, and Consultant."

EXTRA! The M.I.T. News Service released the following statement on Thursday, December 24: "In Mexico City yesterday (December 23) announcement was made of the engagement of Senorita Conchita Zambrano, Sub-Gerente of the Banco de Londres y Mexico, and H. E. Lobdell of Cambridge, Executive Vice-president of the Alumni Association of the Massachusetts Institute of Technology. The wedding is planned for next June,"

Lobby's address until about the middle of January, 1954, is care of Mr. Clarence M. Cornish, Margaritas 139, Col Agricola, Villa Obregon, Mexico 20, D.F. He can always be reached through his Alumni Office at M.I.T. — **RAYMOND STEVENS, Secretary**, 30 Memorial Drive, Cambridge 42, Mass. **FREDERICK BERNARD, Assistant Secretary**, 24 Federal Street, Boston 10, Mass.

• 1918 •

All around us men are looking back on a year that will not come again, for as these few sentences flow down our quill it is approaching Christmas. The moon is almost full, our preparations to play Santa to the small fry are complete, and you will read this in February. So let us make a leap backward somewhat between Christmas, 1953, and Bethlehem. Twenty years ago Fred Philbrick was sales manager of the Western District of the Gamewell Company, which comprised eight states, Alaska, and Hawaii. This was, of course, before he became president of the company. Returning from Honolulu on a suitable liner, he and his wife were assigned to the captain's table. Here also were seated Irene Dunne and her husband. Strands in the web of a happy though passing friendship were woven. About a month after he got home, Fred's secretary greeted him one cheery morning with, "I know where you were last night. You were at the Coconut Grove (night club) in Los Angeles." Actually he had been home reading, but like any good executive he was not telling all until he found out all. So he inquired further and she replied, "Oh yes, you were there with Irene Dunne." "How did you know that?" "Easy. I heard it on the radio. She's the hostess there right now and announced that the next dance would be in honor of Mr. and Mrs. Frederick B. Philbrick who have recently returned from Honolulu." Fred remembers with a chuckle that the title of the music was *Ten Little Bottles on a Shelf*.

All of which reminds me of a recent personal experience at a spiritualist meeting. The medium did some obvious things, like telling a farmer and his wife who could well have been the models for American Gothic, that they had been through hard experiences. Finally she got around to me. I must be a scientist. Yes. I had problems. Yes. "Then you know what I'm talking about." "No, I only know what I'm thinking about." "You're in chemical research." "No." "But I see rows of bottles on a shelf." "Wrong kind of spirits," I said, and that broke up the meeting.

Bill Wyer has been back in the news again. Putting up a stalwart fight against the little fellows often means being beset by the big fellows. In his trusteeship of the Long Island Railroad Bill has so far been almost wholly successful in doing what was really for the best interest of the Road and for the people it serves. He has valiantly and successfully resisted all attempts of the politicians to take over. Result: on December 11 Governor Dewey assailed the Pennsylvania Railroad and the Interstate Commerce Commission at a press conference in the White House in which he criticized the Long Island

Railroad case now before the Interstate Commerce Commission. The New York Governor discussed the case with reporters after having conferred for 50 minutes with President Eisenhower and even longer with members of his staff on the Long Island case. In New York, meanwhile, the state Public Service Commission rejected the Long Island's petition to raise commutation fares on an average of 12.9 per cent and one-way trips by 5 per cent. Such a rise, it was estimated, would increase the road's earnings by \$2,796,000. The petition to the Public Service Commission was in addition to a request now before the Interstate Commerce Commission by the Pennsylvania Railroad to increase the Long Island's commutation rates by 25 per cent. Dewey also was highly critical of William Wyer, trustee in bankruptcy of the Long Island, who, he said, is doing the "bidding" of the Pennsylvania. So Bill gets it from both sides, because the Pennsylvania Railroad is just as unreasonably critical in the opposite direction. What better evidence of the good job he is doing! If they don't criticize you, either they think you are not worth it — or you are not. — **F. ALEXANDER MAGOUN, Secretary**, Jaffrey, N.H.

• 1919 •

Our Reunion Committee has been active with preparations for our 35-year get-together June 11, 12 and 13, at Wentworth-by-the-Sea, Portsmouth, N.H. They have decided that the party will be mixed, particularly so that those from far away places will be more apt to come when their wives can join them, as well as the opportunity of meeting some of the other wives of our classmates. The Committee tells us that transportation will be handled so that people arriving either by plane or train at Boston will be met with automobiles and driven directly to Wentworth-by-the-Sea. Meetings have been held in Boston and in New York to discuss all of the plans. The Boston meeting was attended by Wirt Kimball, Will Langille, Bill Banks, Ark Richards, George McCarten, W. A. Maynard and George McCreery, while the New York meeting was attended by Langille, Way, Blye, Patterson, Rodgers and de Lima. Further notices of progress and plans will be mailed by the Committee. Everybody out!

When George McCarten was on the West Coast last summer, he saw Jimmy Reis for several hours and had a nice talk. Jimmy's wife had been rather badly burned some time previously but was then gradually getting back in circulation again. There is a chance that Jimmy may be able to come to the reunion. Ev Doten in Detroit and George and his wife definitely plan to be there. George says Wentworth-by-the-Sea is a very nice place and a good choice for the get-together.

Harry Kuljian has been honored with a feature article in the June, 1953, issue of the *American Engineer* describing the huge power plant in India recently built by his company and giving a sketch of Harry's life. It points up Harry's ability and willingness to accept and understand the aims, ideals, attitudes and even the

seeming "eccentricities" of people everywhere — his grasp of the diplomatic approach in engineering and construction work. Harry feels that the American engineer tends to specialize too quickly so that, while becoming a leader in technology, he unhappily remains ignorant of important sociological and political facts. Thus, when the time comes for him to deal with persons with a background different from his own, even with the best intentions in the world he is apt to blunder, to the distress of all and detriment of the job he is trying to accomplish. It is, therefore, essential for him to have a general education in world affairs, traditions, economics and human relations. To implement this belief, Harry has donated funds for four annual \$500 scholarships — two at M.I.T. and two at the Drexel Institute of Technology in Philadelphia, with the purpose of helping the student recipients defray expenses so that they will have enough capital and leisure to study the humanities in addition to pursuing their required technical courses.

George Irwin retired as a colonel in the Army in October and has also turned over his Pontiac agency to his son. He has five children, all at Claremont, N.H., with him except his youngest son, John, who is in the Air Force. He has 10 grandchildren. George hopes to attend our 35-year reunion in June.

A note from Jack Fleckenstein that he did a little hunting in the fall, with exceptionally good luck both on birds and deer. He plans to attend our 35-year reunion next June with his daughter Joan, her first class reunion.

John Hanson recently retired from the Lummus Company after 26 interesting years as a construction engineer. His wife and he are planning a trip through the West with emphasis on old ghost towns. After that he expects to catch up on several home projects in his well-equipped basement workshop. When these run out he may get into something active again. Two of John's three daughters have graduated from college, one from Bates and one from Greenbriar; the third is at Allegheny College in Meadville, Pa.

An acorn was included among the items placed in the cornerstone of the \$750,000 research laboratory of Arthur D. Little Inc., last November, since a winged acorn is the trademark of the concern. In addition, an oak sapling was planted at the entrance of the building by a grandnephew of the late Dr. Arthur D. Little and by Albert and William Jeffrey Marshall, 4-year-old twins, grandchildren of Earl Stevenson, President of the firm.

Duke Herzog is still in the hide business. His son Bradford, a Harvard graduate, teaches at Milton Academy, Milton, Mass. His daughter Elizabeth graduated from Coe College, Cedar Rapids, Iowa, and is married to a medical student at Iowa University. Duke has just bought a new home, so expects to have plenty to do. He and his wife hope to be at the reunion at Wentworth-by-the-Sea in June.

Daniel Hall is still with American Cyanamid Company at Gloucester City, N.J., producing titanium dioxide at full capacity. He and his wife are alone now, since the younger daughter, Edith, is en-

rolled at Beaver College in the course of elementary education. Their son is a lieutenant (j.g.) in the Navy stationed with the C.E.C. at Port Hueneme, Calif. The older daughter is married and has presented Daniel and his wife with two grandsons, aged five and three, and resides in Baltimore, Md. Daniel hopes to attend the reunion in the spring.

Stuart Hayes has been with Ludlow Manufacturing and Sales Company for 33 years, and is now a member of the research group. His twins are married and moved away, and he has four grandchildren. His youngest daughter is in Tufts. Besides his family, he keeps busy with Masonic doings, a garden and church activities. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York City.

• 1920 •

It is a pleasure to report that our old friend and classmate, Frank Bradley, who is engineering manager of the Forstmann Woolen Company, has been elected a fellow of the American Society of Mechanical Engineers. He also has been elected a director-at-large of the Society. Frank has been with Forstmann since 1931, and during this period he has been responsible for the construction of two power plants, all of their industrial design and construction, and the maintenance and operation of these facilities. Frank is a member of the American Association of Textile Chemists, the New Jersey Society of Professional Engineers and the New York Society of Professional Engineers. He is a member and co-founder of the Plant Engineers Association of New York. He lives with his wife and four children at 355 Meadowbrook Avenue, Ridgewood, N.J.

Our illustrious classmate, Ned Cochran, Dean of the School of Engineering at M.I.T., has been made a member of the newly created Port of Boston Commission. Art Littlefield is now at 2219 Polk Street, Minneapolis. He is with the Planning Department, Industrial Section, Twin City Arsenal, Federal Cartridge Corporation, and says he hopes to hear from classmates in the Minneapolis area. Bob Tobin's new address is 75 Webb Road, Bridgeport, Conn. Arthur Dopmeyer has moved to 3832 Jason Avenue, Alexandria, Va. Colonel Austin Higgins continues on the move. He has left Fort MacArthur, Calif., and is now in Louisville, Ky., address 2939 Grinstead Drive. Your Secretary has the sad duty of reporting the death of the following classmates: Virgil D. Collins, of Congress, N.Y., Paul H. Duncan of West Medford, Mass., and Walter M. Cusick of Dorchester, Mass. A note from Bunt Murphy refers to the death of Ken Coachman of the Class of 1922 and well known to many of our classmates. Ken died on October 30 at Ballston Spa, N.Y. He was for many years a sales engineer for the Taylor Instrument Company. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

Three members of the junior league of the Class of 1921 entered Technology last fall as freshmen and two others became

graduate students. This brings the current population of our second generation at the Institute to a total of 17 and gives an all-time total of 52 sons and two nephews of classmates who have attended M.I.T. since your Secretary's records of these events began in 1942. The new students are: Peter C. Card '57, Course VIII, son of Thomas B. Card of Fairhaven, Mass.; Lee B. Freese '57, Course I, son of Simon W. Freese of Forth Worth, Texas; Malcolm M. Jones '57, Course II, son of S. Murray Jones of Waban, Mass.; Raymond Q. Anderson, Graduate School, Course XV, son of Paul N. Anderson of Bemus Point, N.Y.; and Robert M. Kendall, Graduate School, Course X, son of Jackson W. Kendall of Pasadena, Calif. A candidate for the doctor's degree in physics, Herbert C. DeStaeblor, Jr., '50, elder son of Herbert C. DeStaeblor of St. Louis, Mo., has won a National Science Foundation fellowship. Robert M. Lurie '52, son of the late Joseph Lurie, is American Cyanamid Company fellow in Course X of the Graduate School. Among the others now at Cambridge are (father's name in parentheses): Graduate School — Allen L. Cudworth (James R. Cudworth), Richard F. Jenney '52 (Melvin R. Jenney). Seniors — Evan T. Colton (H. Seymour Colton), Peter Felsenthal (Robert M. Felsenthal), Decker G. McAllister, Jr. (Decker G. McAllister), Melvin R. Mattson (John B. Mattson). Juniors — Stanley H. Barriger (John W. Barriger, 3d), Myles J. Kiley (Albert J. Kiley). Sophomores — James L. Dougherty (Isaac Dougherty), Franklin T. Flaherty, Jr. (Franklin T. Flaherty).

Paul N. Anderson and Mrs. Anderson have five grown sons and make their home in Bemus Point, N.Y. Paul is president of the Dahlstrom Metallic Door Company in nearby Jamestown. Two of the boys attended Technology, the eldest son, Paul N., Jr., in the Class of 1948 and Raymond, the fourth son, is now in the Graduate School. The youngest son, Timothy, has achieved his fame further up Massachusetts Avenue, where he has been named captain of the 1954 Harvard football team. A junior and star of the 1953 season, he has completed two seasons as varsity guard. Previously he had been co-captain of the Phillips Andover team and was on the varsity squad of Washington High School in Jamestown. Tim was credited with breaking up Yale's goal line threat and later paving the way for a Harvard touchdown in the Crimson's 13-0 victory last fall. Susan Skilling, Wellesley '51, daughter of Mr. and Mrs. Arthur W. Skilling of Greenwich, Conn., was married to Louis R. Jeffrey, Jr., of New Vernon, N.J. The Skillings' elder daughter, Sarah, Mt. Holyoke '47, is married and has a young son. Art is manager of the Marketing Analysis Division of Socony Vacuum Oil Company, New York City.

Harry P. Field, Vice-president and Commercial Manager of the Hawaiian Electric Company Limited of Honolulu, served as chairman of the fourth Hawaiian Conference of the Pacific Coast Electrical Association, held last November at the Queen's Surf in the proposed 49th state. He emphasized the interdependence of all branches of the electrical industry in keynoting the large gathering of rep-

resentatives from local companies and the mainland. A most welcome note from Harry tells us of the birth last July of the Field's first grandson, John Dudley Field, Jr. Their elder son, Harry, Jr., married Jane Butler in Portland, Ore., last December 27. Harry and Catherine flew to Portland for the ceremony and returned to Honolulu via Pasadena and the Rose Bowl game on January 1. Harold F. Stose has joined the U.S. Bobbin and Shuttle Company, Lawrence, Mass., as chief research engineer. Long associated with various divisions of the plastics industry, he is engaged in applying new techniques to the design of spools, bobbins, shuttles, warper beams and related products used in the textile field. He is a fellow of the American Association for the Advancement of Science and a member of the Society of Plastics Engineers, the American Chemical Society, the Franklin Institute and the National Association of Corrosion Engineers. He is married and has no children.

Raymond A. St. Laurent, President of the Class of 1921 and Vice-president of the Rogers Corporation, Manchester, Conn., reports he has been doing a lot of traveling, evaluating men, materials and methods as well as doing some sales training. Always a loyal contributor to this column, Ray says he recently saw Paul H. Rutherford, General Manager of the Delco Appliance Division of General Motors Corporation in Rochester, N.Y. Ray also tells of contacts with Ed Farrand, Harry Field, Zam Giddens and Harold Stose. In a recent letter to Ray on the stationery of Farrand Farms, Colonial Plantation, Route No. 2, Leesburg, Ga., Class Agent Ed says, in part: "Warrie and Mrs. Norton drove here for a flying visit through some of our pastures to see our beef on the hoof. The Nortons look splendidly fit and trim as always. They were en route to Miami. It's still Indian summer here, with mid-day temperatures of 70 to 75 degrees and down to 50 degrees at night. The fall and spring are delightful and, although the winters are cool, men rarely wear topcoats and overcoats are unknown. I just served on our Lee County grand jury. Nearly all are farmers, the salt of the earth and the like of which one finds but few in large cities. This may sound too boastful, yet in my experience it holds true the world over when you enter a small farming community."

Zambry P. Giddens, Jr., President of Palmer Stendel Oil Corporation of Santa Barbara, Calif., announced that its subsidiary, Petrocarbon Chemicals, Inc., will build a million-dollar plant in his home town of Dallas, Texas, for the production of synthetic organic chemicals, primarily for the paint and lacquer industry. The Palmer Stendel organization, an oil producer in Texas as well as in California, has selected a 50-acre site to be near the sources of raw material. Construction is under way and initial operations next summer are planned to include naphtha fractions such as toluene, benzene and zylene. Jack Barriger's Rock Island Railroad is building a spur to bring in raw stock and take out finished products in tank cars. The plant will have automatic facilities for three shift, 24-hour opera-

tion, seven days a week, and separate offices and laboratory buildings for research work. Zam and Mrs. Giddens are residents of Dallas, where he prepared for Technology at Forest High School and was salutatorian of its first graduating class. Following our graduation, he became associated with Truscon Steel Company and then headed his own company in New York City for 20 years in the manufacture of soft goods. He is a member of the Dallas Petroleum Club. A long illustrated feature article in the Dallas *Daily Times Herald* hails Zam for bringing the first petrochemical plant to the area.

David O. Woodbury of La Canada, Calif., wrote the article "M.I.T.: Pilot Plant for Leadership," which appeared in the *Christian Science Monitor* and the November issue of *Reader's Digest*. Warrie Norton sent us the *Monitor* article, which is illustrated with a model of Dr. Van de Graaff's electrostatic generator, the famous "lightning machine" of an earlier Woodbury opus in the *Digest*. In the new story, Dave takes us back to Tech and the newest frontiers for research and design, such as for the inhabitants of Arc-turus IV. We would like to add to this most excellent story the following definition of freedom which President Jim Kil-lian '26 gave to the Class of 1957 at the last Freshman Week End, as quoted in the M.I.T. Newsletter: "College offers young people an opportunity to discover themselves, a process of liberation which is part of the development of an adult. This opportunity of self-discovery is good, provided the student knows that freedom requires mature responsibility. If one wants the freedom to be free, one must share the responsibility for maintaining an orderly community where there is room for freedom because the members of the community impose a practical discipline upon themselves. Each man gives up a little so that every man can have a lot."

Hilliard D. Cook has a new home on Three Rivers Road, Phoenix, N.Y., and John S. Cummings has moved from Watertown to his new home at 52 Hastings Road, Belmont 78, Mass. Robert A. Hill, a colonel in the Corps of Engineers assigned to the Engineer Center at Ft. Belvoir, Va., gives his home address as 4515 Augusta Avenue, Richmond, Va. Antonio H. Rodriguez, Review Secretary of the M.I.T. Club of Cuba, has completed the palatial new home he has been building and furnishing during the last year or so. His address is Ave. R. Men-doza 53 esq. a 17, Alturas de Miramar, Marianao, Havana, Cuba. John N. Worcester has moved from Dover, Mass., and gives a business address at 75 Federal Street, Boston 10.

It is with profound sadness that we record the death on November 26, 1953, of Harold Deane Griswold of 128 Common Street, Walpole, Mass., Production Manager of the Kendall Mills Finishing Division of the Kendall Company of Walpole. On behalf of the Class, we extend sincerest sympathy to his family. Born in Buckland, Mass., April 9, 1899, he prepared for the Institute at Shelburne Falls, Mass., schools and was graduated with us in Course XV. At Technology, he

was active in Corporation XV, the Chemical Society and the T.A.C. In World War I, he served as a second lieutenant, Infantry, and was assigned to the Commission on Education and Special Training. After our graduation, Deane became associated with the weaving and finishing plants of the Griswoldville Manufacturing Company, Griswoldville, Mass., a company which his forbears had founded. He continued with the Kendall Company when it acquired the Griswoldville business in 1933, becoming successively assistant superintendent of the Slatersville, R.I., finishing plant, superintendent of gauze finishing and then production manager at Walpole. He was a member of the Morning Star Lodge No. 13, F. and A.M., Woonsocket, R.I., Phi Sigma Kappa, a member and director of the Boston chapter of the Society for the Advancement of Management, member of the Walpole Blood Donor Committee and former member of the Town Committee and the executive board of the Parent-Teacher Association. He is survived by his wife, Evelyn O. Griswold; two daughters, Mrs. Marieta G. Wendler, a graduate of the University of Massachusetts, and Janice M. Griswold, a senior at the University of Maine; and two sons, Robert D. Griswold, Yale '51, of Massena, N.Y., and Richard D. Griswold, a sophomore at the University of Maine. We are indebted to Ben Fisher, Secretary and Assistant Treasurer of the Kendall Company, for considerable aid in preparing these notes. As the only two members of the Class in the company, Ben and Deane had been close associates for many years.

Just a short note from you during these short winter days will insure the adequate news coverage which your friends in the Class have come to expect. — CAROLE A. CLARKE, *Secretary*, Federal Telephone and Radio Company, 100 Kingsland Road, Clifton, N.J.

• 1923 •

Stephen B. Metcalfe, III, has been appointed assistant district manager of operations, Worcester District of American Steel and Wire Division of the United States Steel Corporation and has been transferred from New Haven to Worcester. He has steadily advanced through various divisions of the organization, becoming general superintendent of the New Haven and Trenton Works in 1948. His new position records another advance in the corporation. Frank J. Travers, XV, has been elected a director of American United Life Insurance Company of Indianapolis. Since 1948 he has been vice-president in charge of the company's securities. He is past chairman of the financial section of the American Life Convention and for a number of years has been a member of the Life Office Management Association.

We regret to report that Stevenson Findlater, IX-B, was fatally injured by a hit-and-run driver early in November. Further details are lacking. News has just been received that Charles J. Koch, VI-A, passed away in Schenectady on November 21, 1953. He was manager of engineering in the induction motor department of the General Electric Company, and was one of the first graduates in the

co-operative Course in Electrical Engineering organized by the Institute in co-operation with General Electric with which he has been associated since graduation. Philip Coleman, XV, spent his vacation on a pleasure trip to Alaska traveling partly by rail and partly by water. He has many excellent colored pictures showing the scenic beauties of the trip. Phil lives at the Lake Shore Club in Chicago where he engages in many activities and is known and beloved by the other club members.

By now you have read the article in the November issue of *The Review* by Professor Milton E. Parker, VII, Director of the food engineering department at the Illinois Institute of Technology, who predicts that the dairy industry faces a formidable competitor in the chemical industry. He points out that many low cost foods can be converted to high quality protein through the addition of amino acids. Nathaniel H. Frank, XIV, gave a talk at the 150th Anniversary of Hebron Academy on "Importance of Science in National Affairs."

Congratulations go to Bernard E. Proctor, VII, as Head of the Department of Food Technology with quarters in the new John Thompson Dorrance building. Some of us had the opportunity to inspect the new building on last Class Day and to appreciate the tremendous strides that are being made in nutrition, preservation, and packaging of food. If you have not already read Proctor's article in the December issue of *The Review*, then it is recommended to you.

Your officers, past and present, are planning a meeting in New York City, December 15, to settle affairs regarding the 30th reunion and make plans for our next get-together. You will receive a report through this column in due course. — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 North Broadway, White Plains, N.Y. WENTWORTH T. HOWLAND, *Assistant Secretary*, 480 Walnut Street, Newtonville 60, Mass.

• 1924 •

Seems like a long time before spring as these notes are written, but there are lots of pleasant breaks still to come before then. Christmas is just around the corner, then there's New Year's, and, of course, the big Mexican Fiesta. You will hear plenty about that in the future. Of course Jack Nevin and Nish Cornish are on the spot. They've been prime movers since its inception five years ago. The Ilfelds are going down from New Mexico. There will be other members of the Class there, and you may be sure the whole affair will be well covered, reportorially, that is.

On Saturday, December 12, a meeting of the Reunion Committee was held at George Knight's home. A good many details were settled, details about which you will have heard before these notes reach you. Suffice it to say, things look good.

So now for the news. National Research Corporation, one of the Institute's next-door neighbors, has a Scientific Trust to provide financial support in fields of basic research. In November this trust made a \$3,200 grant to Thomas K. Sherwood, Professor of Chemical Engineering, for studies in the problem of "Evaporation at

Low Pressures." Tom, you remember, resigned as the Institute's Dean of Engineering to devote more time to teaching and research in the Department of Chemical Engineering.

Theodore W. Kenyon, a Long Islander for 10, these many years, has moved to the mainland. In Old Lyme, Conn., Ted has built his own laboratory. He continues with consulting and special instrument development work. He has formed his own company, Kenyon Laboratories Inc.

Have to leave you in mid-air on this one. E. Robert Derby ran for City Council in Leominster, Mass., this fall, but there's no inkling as to whether or not he made it. Only information we gleaned from that particular clipping is that Elmer is chemical director of the Foster-Grant Company in that city.

Hank Simonds' welcome flow of post cards are masterpieces of their kind. He throws out bits of information that sound like intriguing stories, then leaves the fill-ins to your own imagination. Here's his latest, from Manila: "Here for a day to get a radio man. Other attempted suicide and left him in India. Si." Well, maybe he'll show up at Pine Orchard in June and we can get some answers. By the way, this card showed the local Elks Club, before and after restoration.

A lot has been written and said about the United States consisting of 47 states and Maine. Now Maine is evidently taking pity on the rest of us and sending out missionaries. This fall a Methodist Mission from Maine invaded western Massachusetts, and conducted programs in 12 cities. Among the ministers participating was the Reverend Gertrude G. Harris of Phillips, Maine. The story also revealed how Gertrude happened to become a rural minister. Seems she intended to teach in the mission field, but then she met Mrs. Margaret Henrichsen, whose *Seven Steeples* you may have read, and that acquaintanceship changed her mind.

Charles H. Wardwell has moved from New Bedford to South Dartmouth, Mass. Not much of a move, really, just down the road a piece. Probably gives him more room to moor his boat. Didn't mention last month that J. Adalberto Roig has changed his base of operations. Al's been living in Miami for some years; has now gone back to Puerto Rico. And Vernon Ambler has moved to Mt. Vernon. Logical sounding change. That's in Ohio, by the way, and he's with Continental Can. It will be a heart-breaker to Joe Mares, Ike Lee and a few more to know that anyone could possibly leave Texas, but that's just what Vernon did.

That's it for now — oh yes, the Alumni Fund! Frank Shaw wants me to be sure and say that a goodly number of you have taken him up on that "dollar a year" suggestion, \$30.00 for our 30th. And that he will welcome more of the same! — HENRY B. KANE, *General Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

Our Alumni Secretary, Don Severance '38, at the spring meeting of the Class of 1925 invited those present to attend the November meeting of the Alumni Council, and 13 of the Class showed up on this occasion. Those present were: Ave Stan-

ton, XV, Wally Squire, II, Courtenay Worthington, I, Frank Mulcahy, VI, Sam Caldwell, VI-A, Sam Glaser, IV, Ed Kussmaul, VI-A, Frank Turnbull, II, Greg Gregory, XV, Mac Levine, II, Harold Robichau, I, Fred Rice, I, and your Secretary, III.

Sam Glaser took your Secretary to task for not giving him enough publicity in these notes, so I ask that you particularly observe the fact that he was in attendance. We are seriously considering selling advertising space in this column to accommodate Sam because we certainly don't want him to feel slighted in the least.

We were pleased to note in the *Cleveland, Ohio, Plain Dealer* that Robert Grant, II, has been made general operations manager of the Standard Products Company. He will be in charge of manufacturing at five plants — in Cleveland, Port Clinton, Ohio; Gaylord, Mich.; Lexington, Ky., and Long Beach, Calif. Bob had been with Nash Motors for 17 years, starting in the car repair department and becoming superintendent in charge of assembly and final inspection at the Racine, Wis., plant. Also, he was vice-president of manufacturing of the Modine Manufacturing Company, vice-president of Young Radiator Company, and executive vice-president of Fuller-Johnson Company of Detroit.

We note that Thomas R. Camp, I, was one of the authors of a paper entitled "True Siphons in Water and Sewage Works," which was delivered at the recent Boston meeting of the American Society of Safety Engineers.

It is my sad duty to report that Charles R. Muhlenberg, IV, passed away at Cape May, N.J., on July 16, 1953. Your Secretary has written to Mrs. Muhlenberg expressing the deep sympathy of the Class. — F. LEROY FOSTER, *General Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

• 1926 •

The monthly gentle reminder from the Review Editor says "Class Notes for the February issue of *The Technology Review* will be due in Room 1-281, M.I.T., on Wednesday, December 16." At the moment it is Sunday evening, December 13 — there are 100 more Christmas cards to address, all the Christmas presents to buy, the office Christmas party to attend, and so on, but the day is saved! Bean Lambert, Dick Pough and Tony Gabrenas have written newsy letters which we have been saving for just such an emergency. Your Secretary is really grateful to have these communiqués.

Let's first hear from Dick Pough, who, as many of you know, is with the American Museum of Natural History in New York City as Chairman of the Department of Conservation and Ecology. Dick writes as follows: "My present activities certainly are a far cry from engineering. I have recently spent considerable time in Arizona supervising the collection of material for one of the dioramas in our new Hall of North American Forests, which will portray the driest forest in North America, namely, the giant cactus forest of southern Arizona. This Hall when finished will deal in a comprehensive way with forests and with what is commonly called their ecology; in other words, with what goes

on within the complex community of plants and animals that constitute a forest and with that community's relations to its overall environment. I am also deeply involved in the work of 'The Nature Conservancy,' of which I am president, an organization that is seeking to stimulate the setting up of more sanctuaries or nature reserves, in order that coming generations may here and there have a sample of the original plant-animal communities that occurred here in North America before the white man entered the picture and started to 'improve' on nature."

Last spring we reported the death of classmate Arthur Hewlett and mentioned that we had no knowledge of him other than his last address, Anchorage, Alaska. Dick has filled in the story as follows: "Arthur Hewlett was my best friend in the Class. Our friendship went back to the days when we were small boys, at which time we both lived on Columbia Heights in Brooklyn. As you probably know, Arthur was always a brilliant but restless sort of fellow. Some years ago he gave up his job with Phelps Dodge, sold his home in Hewlett where the family had always lived since pre-Revolutionary days, and went to Alaska. He ended up in the little town of Homer, across the bay from Anchorage, where, after managing the airport for several years, he founded and became the first president of the First National Bank of Homer, Alaska. Always a hard worker, I'm afraid he simply drove himself too hard. His death is a great personal loss to me, and I know will be to those in the Class who knew him. P.S. Saw Whitney Ackbridge recently in Caracas." Thanks, Dick, you certainly did stray from engineering but stayed in a field that interested you greatly while you were at the Institute.

Bean Lambert has written a letter in longhand, which I was going to call "meticulous" until I looked up the word in the dictionary and found it does not mean what I thought. (Your Secretary had his nose severely punched at age 15 for calling another "kid" a name without first looking it up in the dictionary.) However, Bean's handwriting is so neat and pleasing to read that it reminds one of Bean's own carefully groomed appearance and pleasing manner. From his letter we quote: "I see Ted Faithfull about once a year — and his swell wife and three daughters. He is very successful in his own patent law firm in New York and lives in Bedford Village. I talk to Hank Hoar (1926 but socially 1925) in Pittsburgh occasionally where he is district sales manager for National Tube Company. He has a boy about 16, and two small daughters. It's cousin Hank, as a matter of fact, as his lovely wife and mine are first cousins. I can't give you anything worth printing about myself, just go to work, raise boys, play tennis and, oh yes, visit Sea Island, Ga., every October." Thanks very much, Bean, it was swell to hear from you. Bean, by the way, is with the Fidelity Trust Company in Baltimore.

Tony Gabrenas, who has attended every M.I.T. gathering since 1926, is known to most of the Class, and, as we mentioned a year or so ago, he is with the New Jersey State Highway Department and is also a member of the engineering

firm of Spencer and Gabrenas in Trenton. Tony visited a classmate this summer and wrote us such a nice story about his pleasant visit that we shall quote verbatim from his letter: "Last summer my sons, Paul and John, of ages 21 and nine respectively, and I went for a week-end vacation in the hills of Rip Van Winkle. There, in the heart of the Hudson Valley, nestling among the serene hills, is the town of Hudson, N.Y., and there I found one of our classmates, Raymond A. Freeman. He was not sleeping by his rusty blunderbuss as did Rip Van Winkle. Ray was running a modern plant of V and O Press Company. He took us through the plant and we were amazed at the intricacies, machinery and the products that Ray makes there. I was particularly impressed by the safety features with which Ray has equipped presses and other machines to prevent injuries to the workers. Ray is as modest as ever. 'We did this and we did that'; never did Ray say once 'I did it.' That Ray is well known and liked in the town of Hudson, I discovered before I visited him. Upon my inquiry of the proprietor of a small restaurant, his prompt answer was 'why of course I know him,' in a tone of voice that reflected respect.

"Later in life many things we do and our impressions of the people we meet blend with the panorama of life and fade away, but the memories of Tech life grow more vivid with each passing year. I well remember, back in 1922, when for the first time I met Ray in Professor Bailey's calculus class; he was not yet 17 and just a kid. But my judgment was premature for he was quickly promoted to the advanced class in calculus. A couple of years later, in M.I.T. Survey Camp in East Machias, Me., Ray was quick to discover Professor Babcock's mysterious theory that back-sight added to the elevation of bench mark resulted in H.I., and the foresight subtracted from the H.I. gave the elevation of any point desired on the shores of Gardner Lake. Not even mastery of this phenomenon made Ray conceited. Now Ray is more modest than ever. He lives in a fine home on the banks of the Hudson with his family consisting of charming Mrs. Freeman, their daughter and son, who is now in the armed forces. I know that Ray is very well contented in that dreamy valley of the Hudson, surrounded by the sleepy hills of Rip Van Winkle land." That was a well written story, Tony, and it was so nice to hear from you and about Ray.

Now for a few spot news items and we shall wind it up. Barney Billings has a most interesting new job — he has joined the Virginia-Carolina Chemical Corporation organization as sales service representative. Barney will specialize in finishing problems connected with Vicara fabrics. This sounds like a real spot for Barney who has spent so many years in the textile field. Jim Killian tells us that he recently had a visit from Oliver Etheridge, who is technical consultant for A. E. Staley Manufacturing Company at Decatur, Ill. Oliver had been in Cambridge attending the Executive Training Program at Harvard Business School. Our active classmate from Newburyport, Marron Fort, made the news again when he was appointed by the Governor of Massachusetts to a panel to study fluoridation of drinking

water. Marron is general manager of A. and G. J. Caldwell, distillers of New England rum. Perhaps he can think up some additive for water superior to fluorine but probably no less controversial.

That about does it — we were going to give you a recipe for a swell dessert to spring on your wife, but since it already was dropped from one issue for lack of space, we shall have to hold it over for next month. See you in March! — **GEORGE WARREN SMITH, General Secretary, E. I. du Pont de Nemours and Company, Inc., 140 Federal Street, Boston, Mass.**

• 1928 •

This month the class notes were not written by your Class Secretary but by his associates in Cambridge. We asked George to allow us to write the notes so that we could tell you about a classmate who never gets discussed in this column — George Chatfield himself. We believe you should know him better than his own modesty has allowed.

George was born on May 1, 1905, and grew up in Minneapolis, Minn., where he received his early education. Before entering Tech he attended the University of Minnesota. As a Course XV undergraduate George's interests were broad and many. Besides active membership in a number of professional, honorary, and fraternal groups, George found time to serve *The Tech* as reporter, news writer, features editor, and finally as editor. Do you recall that somewhat scurrilous sheet, "The Filter Paper," which appeared when we were students? Well, George was its editor during our senior year. Perhaps the slogan of that paper, "Gets all the dirt," had something to do with the fact that George has been busy boosting soap products almost ever since.

After June, 1928, George, Bill Carlisle, and Ralph Joep shared an apartment together on Memorial Drive, Cambridge. This bachelors' home continued until Ralph married and moved away in 1932. George and Bill continued to live together until April 28, 1934, when George married Marie Walters of Lynn, Mass. They have had two children: Donald Franklin Chatfield, born on January 29, 1935, now a sophomore at Yale, and Susan Morse Chatfield, born on April 22, 1938, and now attending Larchmont High School. Until 1947 the Chatfields lived in Winchester, Mass. Now they make their home at 49 Eton Road, Larchmont, N.Y.

George is in the advertising business, a field in which he has excelled and where his interests have directed him from the start. Prior to Tech it was commercial radio and a printing business. At M.I.T. it was *The Tech* and a thesis on "A Study of Advertising Agency Services." After graduation and for more than 18 years he held important positions in the advertising departments of Lever Brothers Company, one of the world's largest advertisers. He was successively: assistant to the president, Lee Laboratories (Lever subsidiary); assistant to the president, Lee Laboratories (Lever subsidiary); assistant to the vice-president in charge of advertising, Lever Brothers Company; and advertising manager, Rinso and Lifebuoy, Lever Brothers Company. Since 1947 he has been vice-president, Kenyon and

Eckhardt Advertising Agency, then vice-president and group head, Compton Advertising, Inc.

At present George is with William Esty and Company, Inc., Advertising, where, until recently, he has been vice-president and member of the executive committee. On November 16, 1953, the company announced George's appointment to the office of executive vice-president.

Despite a very busy professional life George has given generously of his time to such community activities as town meeting membership, director of the Community Chest, and director of the United War Fund Campaign, in Winchester; publicity director, Larchmont Community Chest, and trustee, Larchmont Avenue Church, Larchmont.

In our Class Report distributed last June at our 25th reunion, George listed the following extracurricular activities: badminton, bowling, fishing, outboard boating, and photography (movies and still). His memberships include the following: Bonnie Briar C. C.; Larchmont University Club; M.I.T. Club of New York; Lambda Chi Alpha Alumni Club of New York. His greatest interest, however, has been, and still is, M.I.T. and the Class of 1928. Few classes can boast of a Secretary who has served so faithfully and so well for over a quarter century. If we may speak for the Class, we extend to George our thanks and our best wishes for continued growth, health, and success, both as an advertising executive and as our Class Secretary. As *The Review* goes to press, regretfully we announce the sudden death of Ames B. Hettrick as of December 27 from a heart attack. The funeral was held on December 30. More information will be published in an early issue of *The Review* as soon as it is available. As you recall, Ames was at the 25th reunion in bouncing good health. To all members of his fine family, his associates, friends, the Class extends its deepest sympathy. — **RALPH T. JOPE, President, Room 1-274, M.I.T., Cambridge 39, Mass. WALTER J. SMITH, Assistant Secretary, 209 Waverly Street, Arlington 74, Mass.**

• 1929 •

The Reunion Committee and their wives recently held a joint meeting, and a feminine touch was added to plans for the June festivities. Attendance was the best ever with enthusiasm high. They must really be our "better" halves. Brig Allen had planned to come from Buffalo to attend but was suddenly taken sick and couldn't make it. Here's to a speedy recovery, Brig.

Ernest Kohler, Jr., VI, has started his own firm, offering sales and engineering service as manufacturers' representatives for electronic raw materials and components. Ernie has spent the last 20 years in the electronic tube business with General Electric, Ken-Rad, and Raytheon. He is located at 1012 Nicholson Street, Cleveland, Ohio. Bill Baumrucker, IV-A, has been made business manager of the Boston *Herald-Traveler* group. Bill has been in newspaper work most of the time since '29, and comes to Boston from the Washington, D.C., *Times-Herald*. Welcome back to Boston. Joe Murphy, IV, appears to be out in front of the rest of the Class.

with the largest family, five girls and three boys. Congratulations! Joe is practicing architecture with his own firm of Murphy and Mackey in St. Louis, along with teaching at Washington University where he was dean of the school of architecture from 1949 to 1952. Ted Malmstrom, I, is in North Carolina on the Roanoke Rapids Power Station for Stone and Webster.

George Buckbee, Jr., XV, is with Air Reduction Company. He briefs his 25 years as follows: "After spending some time in the securities business with Dillon, Read & Company of New York, and a period in public accounting with Patterson, Teele, and Dennis of New York, I became associated with Air Reduction Company, Inc., at first as an auditor, and since 1950 as divisional controller of the export division. Since 1937 I have held a Certified Public Accountant's certificate from the state of New York. During the war I was in the Finance Department of the Army, attaining the rank of master sergeant. I was stationed in Sydney, Australia, and Milne Bay, New Guinea. In 1941 Ruth Carol Raynor of New York, a graduate of Adelphi College, and I were married, and we have one daughter, Lillian, born in 1943. In 1948 we moved from New York City to our present home in Scarsdale, N.Y."

Norman Wickstrand, II, is one of the few fellows who seems to have stayed with one employer. He is with the New Departure Division of General Motors at Bristol, Conn., where he has been a member of the District School Committee, and summarizes his activities as follows: "For the past 20 years I have been engaged by my present employer in various activities concerned with the design, research and manufacture of ball bearings. For nearly five years I have been doing mathematical research on ball bearings and related problems, such as stress analysis and fatigue studies. In this connection extensive study and use has been made of the new Weibull statistical theory of failure. Some work was done with competitors towards standardizing ball bearing ratings. For over 20 years I have been actively interested in hiking and nature study. For most of this time I have belonged to the Appalachian Mountain Club. At the present time I am excursion chairman of the Connecticut Chapter of this club. My vacations have very often been spent at one of the summer camps of this club. Some small trips have been made at other times."

Herby Alley, I, is one of those fortunate to retire early enough to get acclimated and enjoy it. Herb writes from Tavernier, Fla., as follows: "My original plan to become a foundations contractor relegated to road contracting and heavy equipment general supervision for the Department of Agriculture. After setting up the load lines in operation at the Illinois Ordnance Plant I took an assignment to set up a steamship line with 300-odd craft in the Amazon. Later I was production engineer in the manufacture of fuses, bombs, and so on, in Georgia. A year after the war I decided to start living—in the Florida Keys. Nothing of national interest here except that I meet people from everywhere — occasionally an M.I.T. man — usually on a yacht. Traveling is limited to the Bahamas, Mex-

ico, or remote parts of the Keys. Sometime I must take a vacation from a vacation. I'd be glad to see any of the old gang." With Herb's hobbies of boating, skin diving, and bird watching it sounds like a restful and interesting life.

Dave Wilson, XV, has finally settled down to manufacturing underwear. He owns and operates the Revelation Bra Company. Dave's earlier training was acquired in various engineering capacities for U. S. Gypsum, city of Boston, Western Electric, and six years of active duty with the Army. Dave has three sons, the oldest of whom is married and in the Army; the second, a senior at Harvard. Charles Henshaw, II, is a professor in the mechanical engineering department at Clarkson College of Technology, Potsdam, N.Y. Hugh Snow, XVI, is with the Fore River Shipyard of Bethlehem Steel as a civil engineer. Hugh is living in Braintree, has four children, two of whom are in college. John Ellsworth, XV, is with the Boston Edison Company and lives in Ayer, Mass., where he is an active sportsman, specializing in hunting and fishing. John has spent most of his time with the Boston Edison Company on steam and power sales, with time out for four years of military service in the Army.

Jim Reddig, XVI, writes his own story, "Twenty-nine was a boom year in aviation, and the XVI gang started off firmly convinced that the airplane was here to stay. I went to work with Grover Loening, and became assistant chief engineer of his firm occupied with minor research and the design and development of amphibious airplanes. This firm went out of business in 1933 and I went with Fleetwings, Inc., as project engineer for the all-stainless steel amphibian. Following this, from '36 to '39, I was occupied with several East Coast outfits, Edo, Seversky, and others. In 1939 I was added to the research and development staff at the Camera Works of the Eastman Kodak Company as an aeronautical engineer, and have remained in this position for the past 15 years. During the war I was rented out to several other firms needing aeronautical assistance. On switching to Kodak, flying itself changed from a vocation to an avocation — a very pleasant arrangement. My Tech reunion will also mark my 25th year of flying, which leaves me still firmly convinced that the airplane is here to stay and that personal airplanes are very useful vehicles. After following the vagaries of the aviation industry in the depression years up and down the East Coast, it has been pleasant also to have become associated with a company whom you can be sure will be here tomorrow. It has enabled the growing family to get roots down in one community, and to struggle through the design and building of a contemporary home on the shore of Lake Ontario. I don't know how many of these boys are going to turn out to be engineers; I confess to have been doing a little twig bending in that direction. And I guess I still hope, when they are all grown, to be able to get in a little family airplane and tour this country from end to end leisurely." Jim has three sons and a daughter.

Alexis Kononoff, XV, is located in Miami where his consulting engineering

office is located as a base for operations in the Caribbean area. Two years with Buick preceded his entering the consulting field. — PAUL F. DONAHUE, *General Secretary*, Conti and Donahue, 239 Commercial Street, Lynn, Mass. FISHER HILLS, *Assistant Secretary*, Dewey and Almy Chemical Company, Cambridge, Mass.

• 1930 •

Charlie Edlund is the new dean of faculty at Lowell Technological Institute, where he has been a professor of textile engineering. Boston now has a designing branch of Chance Vought Aircraft, the company of which our Fred Dickerman is chief engineer. Horace Myers is with Westinghouse Supply in Charlotte, N.C. Bob Clyne, who has been associated with American Steel Foundries for a number of years, is now located at their plant in Hammond, Ind. Art McCullough is managing a plant for the same company in Newark. Hijo Marean is living in Swampscott, and working in Peabody for American Cyanamid.

Your Secretary had a visit recently from Harvey Chapman, Assistant Chief Engineer for Evans Products of Plymouth, Mich. He has been with them for 11 years, making freight car loading equipment, battery separators, and other items. Harvey has one son, 16 years of age. His brother-in-law, George Shrigley, is vice-president and general manager of Shoppers' World, a super-sized shopping center outside Boston in Framingham. George supervises operations of the police and fire protection forces, parking, heating, maintenance, and just about everything else.

We regret to report the deaths of Louis Vargas of Maracaibo, Venezuela, in 1949 and Philip Torchio in August of last year. Louis was employed by the Colombian Petroleum Company. Phil was at his summer camp in New York and succumbed to a heart attack which resulted from an attempt at water skiing, according to a letter received from Ralph Peters, Phil's roommate at school. Phil was commercial vice-president of American Gas and Electric Service Corporation. He is survived by his wife and two children. To our classmates' families our sincere sympathies are extended.

Two members of our Class have received notice for their literary efforts. Fred Pawley contributed an article to the *Journal of the American Institute of Architects* entitled "Northwest of Las Vegas." Dick Ellis is coauthor of a *Laboratory Manual in Physical Chemistry*. Bob Nelson has organized a manufacturing business in the air conditioning field in Phoenix, Ariz., where his family has moved because of his son's asthma. We wish Bob well in his new venture and hope that our southwestern and far western classmates will send him some news to help make this column more frequent and of greater interest.

Our final news item concerns Tul Houston, who was married last June to Miss Anne Katherine Stuckle of Biltmore Forest, N.C. Tul is president of an industrial realty firm in Newark bearing his name and is the father of two children whose mother passed away in the summer

of 1952. We wish the Houstons every happiness and will look forward to seeing them at the 25-year reunion in 1955. Please start now to make definite plans to attend this reunion. It will come only once! — PARKER H. STARRATT, *General Secretary*, 1 Bradley Park Drive, Hingham, Mass. *Assistant Secretaries*: ROBERT M. NELSON, 48 East Lawrence Road, Phoenix, Ariz.; ROBERT A. POISSON, 150 East 73d Street, New York 21, N.Y.

• 1932 •

Have just received a questionnaire on Jim Abbott, thanks only to his wife, who filled it in, adding: "Having moved this paper every time I have dusted Jim's desk since last April, I finally can stand it no longer so I have filled it in from the distaff point of view. Jim sent the check but you might not get this back until 1982 if it waited for him." Jim is a development engineer for Kendall Mills at Walpole, Mass. He married Rita P. O'Shea of the University of New Hampshire in 1940 and they have two boys, Francis Dallas, 10, and Andrew Delano, five. He is interested in square dance calling, Cub Scout Troop Committee and has a variety of hobbies: music, photography, building home music systems, cooking and dancing (especially folk dancing).

A postcard from Stan Johnson tells us he is pleased to return North again after several years in the South, particularly since he is back in his home town of Nyack, N.Y., where he is living at 46 Sickles Avenue. He was assigned last May by his employers, Parsons, Brinckerhoff, Hall and MacDonald, as resident engineer on construction of a 13-mile section of the New York State thruway from Nyack to Suffern.

Parker Devlin is application engineer and assistant sales manager of Preferred Utilities Manufacturing Corporation. He and his wife, Dorothea B. Crowshaw, and their two children, Cristine and Dorothea, live at 20 Richmondville Avenue, Westport, Conn. Parker says he is active in P.T.A. and the usual run-of-the-mill activities. However, they sound pretty interesting — a hole in one at the Fairfield Country Club, 190 yards against the wind, and writing short stories under several names.

At this mid-December writing of the notes, Kurt J. Heinicke would seem to have the ideal existence. Address: 2035 Harding Street, Hollywood, Fla., President of his own company, Heinicke Instruments, manufacturing laboratory glassware washing equipment and cage-washing equipment. He married Jane Reh in 1944.

Jacob Millman is professor of electrical engineering at Columbia University. He has done research, consulting and teaching in electronics and radar, and is author of a textbook, *Electronics*, 2nd Edition, 1951, McGraw-Hill. He is married to Sally Dublin and with their two sons, Richard S., eight, and Jeffrey T., three, they live at 144-54 69th Avenue, Flushing 67, N.Y. He lists woodworking and fishing as hobbies.

Another professor of electrical engineering is Charles Seibert, who is with West Virginia University. Charles did graduate work at M.I.T., receiving his

master's degree in electrical engineering in 1932. He married Helen B. Markley of National Park College, Washington, D.C., in 1934 and with their three children, Mollie, James and Libby, they live at 317 Demain Avenue, Morgantown, W.Va.

Still another graduate student, Bror Wilhelm Stromberg returns his questionnaire from Stockholm, Sweden, where he is superintendent of the By-Products Department of Stockholm's Gasverk. He is the inventor of the Stromberg Liquid Level Indicator, U.S. Pat. No. 2,556,346; is interested in arctic research, hunting, fishing, motorboating, and studies of the Archipelago of Stockholm. He and his wife, Anna Haglund, have one child, Barbro, 17.

Robert E. Minot is an associate architect of the firm of Royal Barry Wills in Boston. During World War II he was with the Federal Public Housing Authority, working on housing projects throughout New England. He is a member of the Longwood Cricket Club and Badminton and Tennis Club, which pretty well indicates his recreations. Bob lives at 9 Lime Street, Boston, with his wife, Kathleen B. Miller, and daughter, Eleanor Bennett.

We have a country doctor in our midst — Samuel E. Paul, who is an M.D. in Troy, N.H. His wife, Aili Ruth Jokinen, whom he married in 1939, is a graduate of the Massachusetts Memorial Hospital School of Nursing, Boston. They have three sons, Peter Thomas, Daniel Walter and Timothy John. Sam is active in the Boy Scouts; chairman of local War Memorial Recreation Committee (eight weeks' summer water safety program for children of the town); for three years he was chairman of a co-operative school effort, which he says failed locally, but may be successful in some neighboring towns; and when time permits, outdoor activities.

Richard M. Stewart is counsel for Anaconda Copper Mining Company, being particularly concerned with the negotiation of labor agreements and handling of patent matters. He studied at New York Law School and was admitted to the New York Bar in 1938. The family, consisting of his wife, Noel Russell, a Cornell girl, and sons, Barry R., Don M., and Robert B., live at 7 Ardley Terrace, Irvington-on-Hudson, N.Y. Dick is a member of Phi Delta Phi (Honorary Law Fraternity) and National Labor-Management Manpower Committee. He is interested in Scout work and the restoration of old cars, having in his stable a 1908 Studebaker and a 1902 Rambler. — ROBERT B. SEMPLE, *General Secretary*. Box 111, Wyandotte, Mich. *Assistant Secretaries*: WILLIAM H. BARKER, 45 Meredith Drive, Cranston, R.I.; ROLF ELLASSEN, Room 1-138, M.I.T., Cambridge 39, Mass.

• 1933 •

After four months of preparing the class notes, your Assistant Secretary continues to marvel at the wide variety of occupations among our classmates — not to mention the degree of achievement attained by some. For example, Robert H. Winters, Cabinet Minister of Nova Scotia and Canadian Privy Councillor since 1948. Bob was named minister of con-

struction and supply in 1948 and in 1950 became minister of the newly created Department of Resources and Development. Of special significance to us at M.I.T. is the fact that Bob was the speaker at last year's Alumni Banquet and serves ably as a member of the Visiting Committee for the Department of Geology and Geophysics. All this may seem a far cry from Bob's activities on the Walker Memorial Staff in our student days, but the fact is that Bob never fails to pay his respects to Bert Bridges and Bill Carlisle '28 at Walker when he gets within shooting range of Cambridge.

Another classmate who illustrates high achievement is major general Emerson L. Cummings, recently elevated to chief of the Army's Ordnance Corps. A graduate of the Military Academy in 1924, Emerson took his engineering work at Tech in our Class. During the war, he served as chief of industrial operations at the tank-automotive center in Detroit and later went to Europe as chief of the industrial division for ordnance. — George R. Vila has recently become assistant general manager of the Naugatuck, Conn., chemical division of U.S. Rubber. George took his M.S. degree with our Class in chemical engineering. A pioneer in the development of experimental GR-S rubbers, tailored to specific end uses and a pioneer in the application of quality control by statistical methods to chemical manufacturing processes, George is also the author of many technical articles on rubber compounding and the manufacture and use of synthetic rubber. — At a recent meeting of the American Society of Safety Engineers in Boston, Russell C. Buehl drew much attention with his speech on "Pilot Plant Research on the Recovery of Manganese from Low Grade Materials and on Other Problems of Steel Making."

Moving to the more personal side, there is a satchel full of class news: Sam Prescott, depicted in this column only a couple of months ago as one of the Class's two most eligible bachelors, took the vows on December 26 with Miss Dorothy R. Cook of Manchester, N.H., formerly of Everett, Mass. Sam and Dorothy will live in Manchester. Congratulations to both of them. — Edward M. (Bunny) Rickard, officially '34 but well known in our Class, wrote recently on official business on an impressive letterhead indicating that he is now head of the Economics Department of Allegheny College in Meadville, Pa. Bunny and Jim Turner, Director, Vice-president and Treasurer of Talon, Inc., joined forces recently on a community problem. — George Stoll, Treasurer Extraordinary of any class function, presides over a flourishing wholesale grocery business in Boston and serves as president of the New England Wholesale Food Distributors, the oldest organization of its type in the country and covering every aspect of the wholesale grocery business. By night, George presides over the family operations in Pembroke where his wife Jane is involved in church and P.T.A. affairs. The Stolls have a daughter, 15, who is proficient in piano, clarinet and dramatics; and a son, 12, who, as George puts it, "is interested in anything that has nothing to do with study" — and to many

of us in the same boat this all sounds discouragingly normal.

John Longley of Slingerlands, N.Y. (Albany to you), sends a newsy note, reporting a recent meeting with Leighton Rickards and regular Sunday morning chats with our President, Dick Fossett, by ham radio. John's radio "address" is W2ANB. He and Dick "meet" at 7:45 A. M. E.S.T. on 14.250 mc. It does not take much calculation to show that Dick takes first prize among the whole Class for early rising on Sundays. — Finally, as evidence that it is a small world, Beau Whitton reports meeting Jack Rumsey at the Charlotte, N.C., airport. Beau was enroute to Atlanta; Jack was operating between Detroit and Rome, Ga. Beau invites other classmates to stop and see him in Charlotte. — **GEORGE HENNING**, *General Secretary*, 330 Belmont Avenue, Brooklyn 7, N.Y. **ROBERT M. KIMBALL**, *Assistant Secretary*, Room 24-204, M.I.T., Cambridge 39, Mass.

• 1938 •

Congratulations are in order to Dave Beaman who writes: "My marriage to Miss Jane Lawrence on September 26 is the only news about me. As you will recall I have five children from my first marriage, and we are all well and happy. Haven't seen any other '38 men since I missed the reunion except to say 'Hello' to Jack Chapin and Gordon Hunt at an exposition in New York City last summer."

John Cook packs a lot of information in a few words: "Married; five children; live on farm in Williamstown, Mass.; raise (besides children) Herefords, sheep, pigs, ducks, chickens; President and Treasurer of Warren Wire Company of Pownal, Vt. Company manufactures copper wire of all kinds; Company has branches in Paris, France and warehouses in various U.S. cities. Wonderful trip to France this spring, we were there for six weeks on business and pleasure. Three children in school, oldest nine. Three boys, two girls. Life active."

A note from Lew Hull tells us: "Miggie and I now have two children — Arthur, four years, and Martha, two years. We're living almost 20 miles north of Philadelphia near Southampton, Pa. Since graduation I have been with the F. J. Stokes Machine Company and for the past eight years have been manager of the Process Equipment Division. Congratulations on a fine 15th reunion! We're still looking for Bert Grossfinger's statistics." Incidentally, Lou Bruneau promises us that Bert's statistics will be made available in the near future.

Election of additional members to the American Society of Tool Engineers' Research Fund Committee has been announced. Of interest to the Class is the fact that Robert Douglas, past President of the A.S.T.E., is chairman of the Committee. He is president of Godscroft Industries and Specialloid Inc., Ltd., of Montreal. He has been chairman of the committee since its inception in 1952. Having received an initial appropriation of \$75,000, the Committee's functions are the granting of funds to engineering schools for their own research into tool engineering and the conducting of re-

search under A.S.T.E. planning and supervision using the facilities of college and commercial laboratories.

Paul O'Connell, who is a member of the 1018th Control Group of the U.S. Army Reserve, has recently been promoted to the rank of major. Paul and Marie have two children — Edmund and Janice.

Our Assistant Secretary, Doc Wochos, is busy traveling these days, but Mrs. Wochos reports that "they spent a most enjoyable week end at the home of Arch Copeland in Birmingham, Mich." She also reports that "Phil Sellers was recently made member of Board of Directors of Fischer and Porter Company. Hope and Phil are living in New Hope, Pa., where they have a back yard big enough to land our plane."

If we have any other wives in the C'ass who would like to contribute information for the notes, we will be very happy to hear from them. — **DAVID E. ACKER**, *General Secretary*, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge 42, Mass.

• 1939 •

The Alumni Association released its latest directory in late November, so we scanned the booklet to get a new slant on who is doing what in the Alumni Clubs and in the Educational Council. We noted that Fred Grant is mighty busy as a member of the Executive Committee, Cochairman of the Midwinter Meeting Committee, member of the Personnel Committee, and Class Representative on the Alumni Council. Other Council members are Al Graffeo and Oz Stewart, who are acting as representatives of the Fort Worth and Syracuse M.I.T. Clubs, respectively. In and out of the country, '39 men continue to share in the responsibilities of M.I.T. alumni management. In Philadelphia, Wiley Corl is secretary; in Toronto, Maxwell Coutts is president; in Bombay, Shantaram M. Dahanukar is treasurer; Charles MacKinnon is president of the Niagara Falls Club; Ramon S. Sevilla is secretary-treasurer of the Manila Club; Dick Steiner is vice-president of the Baltimore Club; Dick Williams is secretary in Urbana, Ill.; and H. Merritt Woodward is secretary in Seattle, Wash.

The new Educational Council set up by the Institute to carry out the three primary functions, public relations, school contacts, and student interviews is well organized across the country. We find several of our classmates carrying on this work. Bob Cotton is handling Colorado Springs; Bill Murphy and Morrie Nicholson are handling parts of Chicago; Chester Williams, Jr., has the assignment in Cranford, N.J., Ed Yurgelun is covering Passaic, N.J.; Walter White has New Hyde Park, N.Y.; Jim Bruce has part of Rochester, N.Y.; and Mike Herasimchuk is handling four rural high schools near Bethlehem, Pa. Out on the West Coast George Moore and Hal Seykota are taking parts of Portland, Ore., and Jim Barton is assigned to Seattle, Wash.

In addition to his work for the Alumni Association, Hal Seykota manages to do business for the Portland Coke and Gas Company in between cross-country trips, speeches in Sun Valley, trip to Tokyo, and a flight to Honolulu. Energetic Hal

is pushing a new commodity of carbon in one-pound lots. Anyone who would like one pound of carbon, finely powdered and messy, write to Hal who will arrange for a free shipment to any part of the globe.

As announced previously, Oz Stewart is reunion chairman for our 15th, being held June 11-June 13, 1954, at Snow Inn, Harwich Port, Mass. That's down on Cape Cod. A terrific program is being lined up by the Committee. Make your plans now so that there will be no excuses for not being there. Other members of the Committee are Ernie Kaswell, Al Rugo, Al Graffeo, Fred Grant, Bill Wingard, and George Beesley. More information will be sent to you from time to time giving you more of the details. As you know, we never have had any class dues since we left school. Therefore, we have very little money in the treasury and reunions cost money. We would like to ask those of you who are interested in having a top-notch reunion, and that should be all of you, to send a check for a few dollars to Ernest R. Kaswell, Reunion Treasurer, care of Fabric Research Laboratories, Inc., 665 Boylston Street, Boston, Mass. This will help to underwrite our 15th and assure a good time for all. *Assistant Secretaries:* **GEORGE BEESLEY**, Angier Products, Inc., 120 Potter Street, Cambridge, Mass.; **MICHAEL V. HERASIMCHUK**, Box 495, Bethlehem, Pa.

• 1940 •

Congratulations are in order for Ted Thomas who was wed to Maria A. Dollan last October in Salem, Mass. Ted is employed by the Western Electric Company. Dick Gerages is now head of the Chemical Engineering Section of the Redstone Arsenal Research Division of Rohm and Haas in Huntsville, Ala. He is doing research and development work on rocket propellants.

Ed Dench is coauthor of a paper on the development and applications of high power backward wave oscillator, known as the Carcinotion, and the development and future possibilities of the grid magnetron, delivered at the meeting of the American Society of Safety Engineers in Boston last November. Our final news item concerns Leonard Weaver who is equally distinguished as a geologist with Bird and Son and as director of the Neponset Choral Society. At the time of preparing this column, Leonard was hard at work on the Choral Society's Christmas Concert to insure that it would be the best in the current series. As Leonard was a member of Course XII and also of the Tech Glee Club, both his vocation and his avocation are a direct result of his interests at Tech.

To keep the '40 notes from vanishing like the Cheshire Cat how about taking just a minute to write Al of recent news concerning you, your family or your classmates. And if you feel so inclined, also include \$2.50 for class dues. — **ALVIN GUTTAC**, *General Secretary*, Cushman, Darby and Cushman, 7814 Marion Lane, Bethesda 14, Md. **MARSHALL D. MCCUEN**, *Assistant Secretary*, Oldsmobile Division, General Motors Corporation, Lansing 21, Mich.

• 1941 •

A post card from Warner Knight in Arcadia, Calif. says "Have been here three years now. Office and warehouse manager for Warner-Hudnut, Inc. (cosmetics, pharmaceuticals). Two daughters, one wife. Living the good life — occasionally yearn for good old New England but enjoying ourselves here. Best regards to all." See how easy it is? How about more such notes?

The National Welding Equipment Company of San Francisco has announced the appointment of Hank Pohndorf to the post of sales manager. Hank has been in the welding business since graduation, and has been with National for seven years as chief engineer, which position he will still fill. Congratulations, Hank — it sounds as if you'll be kept occupied fairly well. Burnham Kelly, Associate Professor of City Planning and Director of the Albert Farwell Bemis Foundation, spoke on "The Current Municipal Planning and Subdivision Control Legislation" at a conference of the Massachusetts Federation of Planning Boards held in Worcester last November.

This, plus a few address changes, winds up the column for another month. J. Melvin Biggs, Room 1-230, M.I.T.; Richard C. Collins, Jr., 1401 South Oak Street, Arlington, Texas; Sherman E. Crites, 48 Forest Avenue, Wyoming 15, Ohio; D. Allan Firmage, 146 East Ravine Street, Kingsport, Tenn.; Richard L. Hayes, 4624 Edgefield Road, Bethesda 14, Md.; Edward R. Marden, E. R. Marden Corporation, 233 Harvard Street, Brookline 46, Mass.; William F. Osborn, Jr., Box 767, Charlottesville, Va.; John C. Potter, R.D. 1, Katonah, N.Y.; Atwell J. Smith 1617 Sheffield Road, Birmingham, Mich.; Richard B. Stambaugh, R.D. 3, Brewer Heights, Chillicothe, Ohio; John J. Symons, 269 Meadow Street, Meadville, Pa. — IVOR W. COLLINS, *General Secretary*, 28 Sherman Road, Greenwood, Mass. JOHAN M. ANDERSEN, *Assistant Secretary*, Saddle Hill Farm, Hopkinton, Mass.

• 1942 •

Here's to good skiing for many, to good sunning on warm sandy beaches for some, and comfortable long winter evenings for most. With all the dramatic dynamic happenings in the world today, I must apologize for finding so little to report about the members of our Class. Why, statistically speaking, there should be at least three or four new children whose arrivals should be announced here! I have a friend in town, an alumnus of a neighboring engineering school, whose wife is expecting their third December-born offspring. Income tax-wise this seems like good control. We welcome and promise to print all family announcements, promotions, awards, and news of interest about each one of the 1,100 plus folks of '42.

The Technology Review Office recently forwarded two items of interest: Charles H. Lawrance, now of Los Angeles, is with the California State Department of Public Health as sanitary engineering associate in the Bureau of Sanitary Engineering. Previous to last August he was with the

Connecticut State Department of Health. And a clipping from the Cleveland, Ohio, *News* tells us that Dr. John Sloan Stewart has been appointed resident physician at the Salvation Army's Booth Memorial Hospital. John received his M.D. degree from Cornell and interned at the New York Lying-in Hospital and the Orange, N.J., Memorial Hospital in obstetrics and gynecology.

Promotion of the month is that of Navy Captain Bernard H. Meyer, who came to Tech from Annapolis and took his S.M. with us. He is now on active duty at St. Petersburg, Fla., enjoying, in his spare time, some of that aforementioned warm winter sun.

The long-distance move since the last issue is Edward Yoder's from Louisville to Galveston, Texas, 800 airline miles. Other changes of address are noted for Clarence Eckmann to Racine, Wis.; and Major John W. Kodis to the Hq. 28th Weather Sq., A.P.O. 196, New York.

As an adopted New Englander (and ex-New Yorker), I note that three '42 men have left this dreary but never dull clime for Long Island — Maurice J. Janson to Jamaica, Robert E. Krucklin to Queens Village, and Richard S. Whipple to Hickville. — LOUIS ROSENBLUM, *General Secretary*, Photon, Inc., 55 Charles Street, Cambridge 41, Mass.

• 1943 •

I received a most interesting birth announcement from Walter McCarthy recently, which I'm going to pass along to you: "The McCarthy Chemical and Pharmaceutical Laboratory of Seattle, Washington, proudly announces the isolation of a new natural product: Timothy Woodbridge, first isolated at 11:35 P.M. on September 25, 1953, in a yield of 8 pounds, 13 ounces. Therapeutic indications: Immediately induces profound euphoria on viewing the specimen. Undesirable side effects: Frequently causes nocturnal wakefulness." Walt sent the following note with the good news: "This is what my wife and I made up to announce the recent arrival of our second son. We might further add that he has another '43 man, John Harsch, as a god-father. I had hoped to attend the 10th reunion this year, but unfortunately, it was held just before school was over here at the University of Washington."

Bill Sammons was a recent speaker at the Charlotte, N.C., Engineers Club, on the topic, "Residential Air Conditioning." According to the club bulletin, Bill came to Charlotte six years ago as branch manager for the Dealer Department of Carrier Corporation. This past year he became district manager for the Unitary Division, the division that handles the distribution of the unit products sold through franchised dealers. Bill, a dynamic redhead, attended both Williams College and M.I.T., participated in many extracurricular activities in the former but concentrated on a degree in electrical engineering in '43 at the latter. During the years he worked on servomechanisms in the M.I.T. research laboratories, joined Carrier in Syracuse in 1945, and was sent South two years later. Though originally from Albany, N.Y., he has adopted Charlotte, and with the exception of his

two fine children, makes business his hobby.

From the Allied Van Lines *Dispatcher*, came an interesting article of a large scale moving operation performed by the Reebe Storage and Moving Company, of Chicago, Ill., under the direction of classmate Bob Reebe. Bob's company moved a whole insurance company's office over a week end without losing even a paper clip, so we are told. By using blackboard diagrams, five different colored tags, and intricate scheduling, Bob had everything right in place for the 500 insurance employees when they arrived at work.

Although I had not originally planned to print address changes in the notes, I have noticed that other Class Secretaries do so, so here goes: George W. Bartlett is in Muskegon, Mich.; Alvin Brodie is in Millbank, London, England; Theodore Cale, Jr., Barneveld, N.Y.; Raoul Desilets, Shawinigan Falls, Province of Quebec, Canada; Frank Dibble is in Northbrook, Ill.; Dr. Herb Goldstein, White Plains, N.Y.; Irv Olsen, Hendersonville, N.C.; Barry Russell, 3d, Wilmington, Del.; Rodney Smith, Omaha, Neb.; Bob Snyder, Carteret, N.J.; Wesley Train, Altadena, Calif.

Dick Childerhose recently moved to Winchester, Mass., as he recently became associated with Ruge-deForest in their laboratories in West Cambridge. All readers can help "Poor Richard's Almanac" by writing news for these notes. Send me anything, even your bills, I'll print them. — RICHARD M. FEINGOLD, *General Secretary*, 49 Pearl Street, Hartford 3, Conn.

• 2-44 and 10-44 •

The 10th reunion is the talk of all classmates by this time. Registrations have begun to pour in, and it looks as though the old Curtis Hotel in Lenox will be packed to the rafters with '44 men and their ladies. Although the program offers quite a variety of activities, the accent is definitely on seeing the boys and gals again.

King Cayce, John Hull, Dick Hinchcliff, John Stevens, Ken Nelson, Bill Ritterhoff, and Joe Lester will be at the reunion, just to mention a few. Joe Lester, incidentally, finally pried himself away from Cambridge where he worked at the M.I.T. Wind Tunnel. He has taken a job with E. I. du Pont. To fill an occasional longing for the scholastic atmosphere, Joe returns to Cambridge on business now and then.

Ken Rehler went into the development and manufacture of digital computers components last March along with two other M.I.T. men. Since then the company has grown to 16 engineers and a total personnel of 20. The company has undertaken the operation of a digital computing system in California. Hence, Ken moved to California last December in technical charge of the operation. His wife, Gwen, and children, Mike, aged eight, and Karen, aged four, followed shortly after the first of the year. Ken and Gwen will be looking up you '44 men on the West Coast as soon as they resettle.

Classmates in New England got together for a dinner last January 25. John Hull came up from Ivyland, Pa., to tell

the boys and wives about his Far East experiences. This was the tee-off of what now appears will be a regular New England Club of '44 men. Everyone had a good time.

Let's make this 10th reunion the best ever! Arise Ye Sons of M.I.T. (tomorrow morning) and mail your registration cards to Mal Kispert. — F. SCOTT CARPENTER, JR., *Reunion Chairman*, 39 Middle Street, Hingham, Mass. BURTON A. BROMFIELD, *General Secretary*, 608 Grove Street, Newton Lower Falls 62, Mass.

• 1947 •

In writing my last set of notes, I overlooked an event of some importance and interest, namely, the wedding last summer of Bob Warner and Genevieve Stacewicz of Boston. The oversight was two-fold, because I was present at the affair, in an ushering capacity. The ceremony took place in the First Unitarian Church in Boston, followed by a reception at the Faculty Club. After finishing his work at Tech, Bob and his bride motored West, where Bob is presently employed in the Ames Laboratory of the N.A.C.A. in California. Their address is 463 Lylton Avenue, Palo Alto, Calif.

A few other items to report on briefly. Lieutenant Colonel Thaddeus Nosek has been appointed assistant engineer commissioner for Washington, D. C., relinquishing command of the 313th Engineer Construction Group, Verdun, France, to take up his new post. Bob Herbert has joined the staff of Philip Spaulding Company, a Seattle, Wash., naval architectural firm, as chief draftsman. Bob was formerly with the Ford Motor Company, and more recently was ship superintendent for Todd Shipyards Corporation, San Francisco, Calif. A full-page clipping from the Miami *Herald* describes in words and pictures a "sassy little house" designed and built by Gebhard G. Rockerman. The reporter who wrote the story puts it rather succinctly, I think, when he says that it is "bound to perturb the conventional-minded as much as it entrances moderns." The floor plan is something to see.

Bob Meier was ordained and installed as minister of the Lordship Community Church, Stratford, Conn., last November. After two and a half years as a research engineer with United Aircraft Corporation, Bob entered the Hartford Theological Seminary where he received a degree of bachelor of divinity last May. Prior to coming to Lordship Church, Bob was pastor of West Granby Methodist Church and Copper Hill Methodist Church, East Granby, Conn.—CLAUDE W. BRENNER, *General Secretary*, 1470 Beacon Street, Brookline 46, Mass.

• 1948 •

An unusual assortment of news arrived this month from the clipping service, and we'll go through it in just the order it happened to come out of the envelope. The first item is of particular interest to me since it concerns a friend of long standing, Ken Brock. It seems that Ken, who is Army private, has been named an honor graduate of the Leadership Training Course conducted by the 9th Infantry Division Artillery at Fort Dix, N.J. He

was named for excellence in map reading, use of weapons, the compass, leadership psychology, and related subjects. Before entering the Army, Ken was the advertising manager of the Gabriel Company of Cleveland, Ohio. Back in 1944 Ken started in V-12, the Naval College Training Program, at M.I.T. at the same time that I started the program. After we had spent the better part of two years in the program, it was discontinued and we returned to M.I.T. to graduate as civilians. Then it was decided that our previous service would not count toward draft exemption, so now we receive news about Ken in the Army.

Marshall Dick was separated from the Army on August 8 of last year after serving two years with the Army Chemical Center in Maryland. He is now with the Columbia Southern Chemical Company in Barberton, Ohio. He has one son, Stephen, who was a year old last October 10. Charles Tenney, Jr., is engaged to Lederle Stearns of Longmeadow, Mass. Miss Stearns is a graduate of the Masters School and of Bradford Junior College.

Naval Lieutenant William P. Horton has reported to the Naval Air Development Center, Johnsville, Pa., for duty in the Center's Aeronautical Electronic and Electrical Laboratory. Professor R. C. Dean was a speaker at a meeting of the American Society of Civil Engineers which took place in Boston, October 19 through October 22. Professor Dean's subject was "Instrumentation Problems in Gas Turbine Developments." Cecil Hall is the author of a new book, *Introduction to Electron Microscopy*.

Sorry to close the notes with so little information, but we didn't have a single letter to help out this time. How about it? Have you given the Secretary the latest news about yourself? If not, please get busy and write a letter. Your letter is what your classmates would like to read. — WILLIAM R. ZIMMERMAN, *General Secretary*, 3130 North Lake Shore Drive, Chicago, Ill. RICHARD H. HARRIS, *Assistant Secretary*, 26 South Street, Grafton, Mass.

• 1950 •

Wedding bells continue to ring out loud and clear, and this month we welcome six more happy couples into the fold. June Stevens Haraden and William Robert Gordon were married at a double-ring ceremony at Centenary Methodist Church in Attleboro on October 17. Following a wedding trip to Vermont and New Hampshire, the couple settled in Allston, Mass. Bill is employed by the Ford Motor Company in Somerville. On October 24 Corinne Rogers and Oswald Honkalehto said "I do" at St. John's Episcopal Church in Springfield, Mass. They have settled in Boston while he completes his studies at graduate school. Another Springfield wedding was that of Joyce Elizabeth Steere to Donald McGuire on September 13. The couple went on a wedding trip through Canada and then scooted out to Detroit, Mich., where Don is employed by the Pennsylvania Salt Manufacturing Company as a standards analyst. Alice Hanchar and Robert Signorelli were united at a Nuptial Mass

at the Immaculate Heart of Mary Catholic Church in Brooklyn on September 23. Bob is an aeronautical research scientist at the National Advisory Committee for Aeronautics in Cleveland, Ohio, and the couple will make their home in that city.

The wedding party at the Ladue Chapel, where Harriet Manter Woods and Henry Sharp, Jr., were married, had its fair share of Tech men. Dan Tiffany '49 of San Francisco, Norman Tisdale, Pittsburgh, George Loomis '49, New York, Richard Stephan, Boston, and Bob Boyden, Dayton — all were ushers at the wedding. Robert John Sullivan and Barbara Lee Hain became husband and wife on October 24 in Milton, Mass. Bob and Barbara spent their honeymoon in Bermuda and then settled down here in Boston where Bob is employed by the Gillette Safety Razor Company.

Although your Secretary is usually a little late in reporting the doings of Dan Cupid, he believes in the adage "Better late than never." However, if he has missed out in reporting the facts and figures of your wedding day, drop him a two-cent post card (oh, for those pre-inflationary days of the penny post card), and he will let the world in on your secret.

Bob and Margaret Mann are the proudest parents you ever saw. Little Robert Wellesley, Jr., arrived on November 8 at St. Elizabeth's Hospital, Boston, and he tipped the scales at eight pounds. (Did I say little?) and the Joe O'Learys now living in Elizabeth, N.J., said hello to their son, Timothy Paul, on December 5. And speaking of babies, Daddy Weaver tried to talk Mother Weaver into the fact that the age of five months was the proper age for a young 'un to receive his first set of electric trains — but no dice. Daddy and J. T., Jr., will have to wait.

Now for news from here and there and everywhere. Ed Smith is now with the United States Rubber Company's general laboratories at Passaic, N.J. Stanley Chaikind has been appointed an assistant to the president of the Belgian Electric Sales Corporation in charge of publicity, planning and statistics. Michael K. Wilkinson has written an article entitled "Crystallographic Variations of Field Emission from Tungsten," which was published in the September, 1953, issue of *Journal of Applied Physics*. In the same issue there was also an article entitled "The Energy Stored in Metal Chips During Orthogonal Cutting." This article was written by Michael Bever '42, Earle Marshall '48, and Leland Ticknor '50.

John J. Drysdale joined the research staff of the Du Pont Company's Chemical Department at the Experimental Station in Wilmington. John received his Ph.D. in Chemistry at the University of Illinois. John K. Williams also joined the Du Pont Experimental Station in Wilmington and he also received his Ph.D. from the University of Illinois. William Towles is an electronics engineer working on missile guidance systems at the Glenn S. Martin Company, Baltimore, Md. Marc Dreyfus is with the American Optical Company and has just changed his address from Stamford, Conn., to Southbridge, Mass. The company moved its research center so Marc moved along with it.

James M. Fitzpatrick, Jr., was employed by an oil company in Texas but he recently joined the Du Pont Company. John Kern has accepted a position as special assistant to the vice-president of the McBee Company in Athens, Ohio. Ed Spoehel, Jr., is working for the government in Washington and has an opportunity to do a lot of traveling.

Bob Snedeker dropped us a note to state that he's finally out of the Air Force and that he's studying for his Ph.D. in Chemical Engineering at Princeton. Jack Martin after serving his stint in the Army returned to Tech and is working in the Internal Combustion Laboratory. Ed Adelson also received his separation from the Air Force and is now with the Field Engineering Staff of Hughes Aircraft Company, Culver City, Calif. Bill Flye is now in Granby, Conn. after his two-year hitch with the Corps of Engineers. Karl Ahlstrand, Jr., another Engineer Corps buddy of mine at Fort Belvoir, served 14 months with an engineering unit in Korea and finally arrived in the states in September. Myles Spector, my loyal right-hand man last year, has put his Air Force uniform in moth balls and is enjoying civilian life once again.

Private Sam Holland was at Fort Dix, N.J., when last heard from. Lieutenant Robert Randall, now with an Ordnance Battalion at Fort Bliss, Texas, and Lieutenant Robert Roig were transferred from Eglin A.F.B., Fla., to Bartow, A.F.B., Fla. Lieutenant Ed Perkins is now at Tinker A.F.B., Oklahoma City, Okla. Fred Kurzweil is with Radio Free Europe. Major William Freeman was promoted to lieutenant colonel and is stationed in Dallas, Texas. Captain Jack Downhill is stationed in Baltimore, Md. John Litchfield said goodbye to the officer's club and hello to civilian life. He is now in Urbana, Ill.

A late card from Al Shaw says that he's an aerodynamics design engineer at Chance Vought Aircraft, Dallas, and that he has a year-old son, Allan W., Jr., who was born on January 13, 1953. See you next month. Keep writing in about yourselves. — JOHN T. WEAVER, *General Secretary*, 18 Buena Vista Park, Cambridge 40, Mass.

• 1951 •

Your secretary hopes that one of your new year's resolutions called for dropping a card or letter to ye olde Secretary to give us all a chance to share in the news about '51. How about it, fellows (and gals)?

Engagement: Marc Aelion to Iris Latow of Springfield. Marc will finish his studies at Tech in June. **Marriages:** Joe Clark to Jean Stevenson at Newton in October. Peter Elefteriades to Nancy Cleveland at Cambridge in October. Charles Elliott to Helen Knox in September at Boston. Chuck is doing research work at the Norwood Laboratories of the Factory Mutual Engineering Division. Carl Hurtig to Martha Johnson at Dorchester in October. Douglas Kaufman to Ruth Kendall in November at Newton. Douglas is a research assistant at M.I.T. Bill Maini to Maria Lipka at Woonsocket, R.I., in October. Bill is teaching at Tech while working for his doctorate degree.

Eugene Oster to Carolyn Estey at Boston in September. Fred Plemenos to Elektra Afentakis at Boston in October. **The Stork's Corner:** Ralph Romano's wife, Betty, presented him with a bouncing baby gal: Elizabeth Anne. Weight: 7.5 pounds. Date: November. I understand the proud papa has recuperated from the strain. Congratulations to you all!

Other News: Bill Santelmann is employed as an electronics engineer with the Atomic Instrument Company, Cambridge. Fred Weitz, now a second john at Wright-Patterson passed over some news he received from Howie Schwartzman. Howie reports: "Jerry Levine has been sent to work with subcontractors in England by the Hazeltine Electronics Company. Jerry Hartstein said 'adieu' to the U.S.A.F. in August and is presently touring Europe. Ronnie Greenwald is working for Shell Oil in St. Louis with a production and facilities planning group. I was drafted last March from my job as a process engineer in a G.E. cathode ray tube plant in Buffalo. At present I am stationed at the Army Chemical Center, Md., and am working in an engineering and trouble shooting branch of the Chemical Corps." Thanks, Howie!

Art Wasserman sends us some news covering his activities in England and other parts of Europe. He reports that his studies keep him quite busy but that he finds time to explore interesting facets of European activity. As to other classmates, Art tells of meeting Jerry Levine: "Jerry and a (Yale) friend dropped down to Oxford one Sunday and we spent an interesting afternoon and evening together, having tea with some English girls I know here at the University, and then catching a meeting of the Lincoln College Junior Common Room — an attempt at student government in the college whose meetings are usually quite entertaining, bringing out the best in British wit . . . I heard again from Pete Silveston whom I missed seeing on my trip this past summer through western Europe. With three others I drove through France, Spain, Italy, Austria, Germany, Holland, and Belgium in a little over six weeks. But at the time I was passing through Munich, where Pete is working at the Technische Hochschule, he was off thumbing his way to Portugal (where he visited his family) and back, so we missed each other. He writes that he expects to spend the best part of another two years on his thesis here." Thanks, Art, and good luck on your studies and to Pete also!

One more item: Karel den Tex took Anita Cummings as his wife in May, 1953. Station SJM now signing off. — STANLEY J. MARCEWICZ, *General Secretary*, Route 2, Highland, N.Y.

• 1953 •

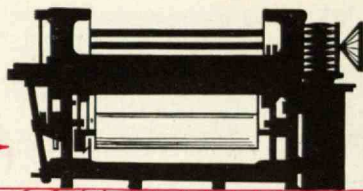
I have been home from Ft. Belvoir for about a little better than a week, leaving a number of men from Tech to go their own separate ways. Jul Greenebaum maintained the Tech reputation for turning out workers by taking first place among a field of 85 in our Class. Doug Meyer and I placed among the top seven along with Jul's first place. I believe that I have already mentioned to you the nature of the future assignments of the Tech

men in our class. Upon leaving Belvoir, I had very little data on the future assignments of Tech men in classes behind mine with the exception of the fact that Fran Turcotte will spend another three months in the states before overseas duty. Mike Levy and Dick MacCarthy who were originally in the 85 E.O.B.C. (Engineer Officer's Basic Course — a new class begins every two weeks and presently runs for 12 weeks) are now in the 86th. Mike was in the hospital for a couple of weeks which necessitated his moving back a class; Dick MacCarthy sustained a different type of "malady" — on October 24 he and the former Gloria Larson were married. Gloria is a graduate of the University of Massachusetts; she and Dick journeyed to Washington, D.C., on their wedding trip. They plan to live in Alexandria, Va.

This 30-day leave, prior to overseas duty, has, personally, been a welcome and thus far extremely enjoyable "break." I spent one week end in New York and one in Boston — during both, I enjoyed the company of El Gaudin, one of the attractive and personable young ladies who have enhanced M.I.T.'s staff of secretaries with their presence.

There are about four wedding announcements that I would like to pass on to you at this time. Luis Peralta (a former Tech student from one of our good neighbor countries to the South — Guatemala) was married to Maureen Leary early in November. Among the ushers at the wedding were Tony Ranti'54 and John Rutigliano. Luis and Maureen will make their home in Chicago, Ill., after a wedding trip to Palm Beach, Fla. Robert E. Doheny and Miss Helen Bryan were married in Milford, Mass., on October 23. Mrs. Bryan is a graduate of Oak Knoll School, and also attended Wheelock College and Katherine Gibbs School. Also, on the October marriage parade were Ross Robinson and Miss Barbara Brown, and Alcon E. Gallagher and Miss Jane Watson. Ross completed his graduate work at Tech last year, and Barbara graduated from Simmons College where she was, until recently, a member of the college's staff. The Robinsons also plan to settle in Illinois (Waukegan — the town Jack Benny made famous) after a wedding trip to New Hampshire. Going on to the Gallagher-Watson marriage, Jane is a '53 Simmons graduate. The Gallaghers sailed on the 30th of October for Chuquimata, Chile, after a wedding trip in Oregon.

I have one further note concerning a fellow soldier, Private Charles Drane, Jr., who has been assigned as a physicist's assistant with 9393rd Technical Service Unit, Ordnance at the White Sands Proving Ground in Tularosa Basin, N.M. During the two weeks after the first of the year I will be en route to the West Coast for further assignment to the Far East. Because it will be difficult to make contact with your letters, I thought I might give you a running account of our itinerary plus what data arrive before my departure. I hope this meets with your approval, and that you will forward any suggestions and comments to me. — VINSON W. BRONSON, JR., *General Secretary*, 33 Wooster Heights, Danbury, Conn.



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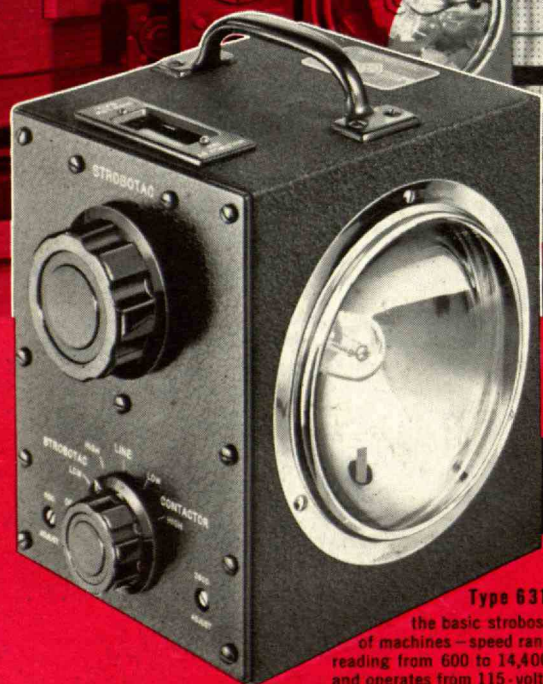
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